

JPRS 82167

4 November 1982

# USSR Report

INTERNATIONAL ECONOMIC RELATIONS

No. 43



FOREIGN BROADCAST INFORMATION SERVICE

## NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

## PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

4 November 1982

# USSR REPORT

## INTERNATIONAL ECONOMIC RELATIONS

No. 43

### CONTENTS

#### USSR-CEMA TRADE

CEMA Cooperation in 1970's, 1980's Surveyed (N. Barzin, L. Bibik; EKONOMICHESKIYE NAUKI, Apr 82).....	1
Long-Term Program for International Specialization, Cooperation of CEMA States (S. N. Sil'vestrov; IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA, Jul-Aug 82).....	16
Problem of Reducing Amount of Metal Used in Manufacturing, CEMA Cooperation (A. I. Zubkov; IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA, Jul-Aug 82).....	27
Importance of Transfer Ruble Underlined (S. Baigarov; AGITATOR KAZAKHSTANA, Jul 82).....	40

#### TRADE WITH INDUSTRIALIZED COUNTRIES

Review of Issues Discussed at Soviet-Finnish Symposium (Yu. Piskulov; FOREIGN TRADE, Aug 82).....	42
Austria's Role in East-West Trade Outlined (E. Khorn; SOVETSKAYA ROSSIYA, 4 Aug 82).....	47

#### GENERAL

Defining Effectiveness of Importing Equipment, Questions of Economic Stimulation (S. Zakharov; PLANOVOYE KHOZYAYSTVO, Aug 82).....	49
Scope of Soviet Licensing Agreements Viewed (APN DAILY REVIEW, 22 Jul 82).....	50

## USSR-CEMA TRADE

### CEMA COOPERATION IN 1970'S, 1980's SURVEYED

Moscow EKONOMICHESKIYE NAUKI in Russian No 4, Apr 82 pp 89-96

[Article by N. Barzin, professor and doctor of economic sciences, and L. Bibik, docent and candidate of economic sciences: "Strengthening the World Socialist System and Cooperation of the Socialist Countries"]

[Text] It is altogether natural that the world historic role of the socialist commonwealth should be growing steadily and confidently along all the main lines of construction of the fundamentally new system of international relations. It was noted at the 26th CPSU Congress. "World socialism is moving forward confidently in literally all fields--in economic and cultural development, in the improvement of social relations, and in socialist democracy."<sup>1</sup>

This is indeed understandable, since the social, economic and political commonwealth of free and sovereign peoples traveling on the road of socialism and communism is an alliance of a completely new type, one which is unified by the fundamental interests and goals they have in common, by close ties of comradesly solidarity and mutual support. The socialist commonwealth of free peoples is the strongest and most influential course of the present time, the main pillar of support for peace on earth.

#### The Dynamism of Mutual Cooperation of the Fraternal Countries

The fraternal countries have been able to achieve impressive success in solving the growing overall problems of socioeconomic development thanks to the fundamental advantages of socialism and international relations of the new type. They have moved on to a qualitatively new frontier of social progress. In the USSR an advanced socialist society has been built--the normal stage of socioeconomic maturity of the new system within the limits of the first phase of the communist formation, when the restructuring of the entire set of social relations on the collectivist principles inherent in socialism is completed. Under these conditions the economic laws of socialism are given full room for their operation, for realization of the undisputed advantages which the socialist system possesses. The course toward creating advanced socialism is being pursued in many socialist countries, consideration being paid, of course, to the peculiarities inherent in each of them.



After the 1971 adoption of the Comprehensive Program for Further Extension and Improvement of Cooperation and for Development of Socialist Economic Integration of the CEMA Member Countries, which is in line with the fundamental interests of their peoples, the countries of the socialist commonwealth achieved considerable success in the seventies. Experience over more than a decade in carrying out the Comprehensive Program ... furnishes convincing evidence that the economic interaction of the socialist countries has risen to a far higher level over that time and the intercomplementarity of their economies have been strengthened. It should be borne in mind in this connection that weather conditions in recent years have been unfavorable for the economy of a number of socialist countries. Nevertheless, it is an incontestable fact that on the basis of their own effort, relying on their mutual cooperation, and using the fundamental advantages of socialism, in the seventies the countries of the socialist commonwealth almost doubled the figures of the advanced capitalist countries for the most important economic indicators--the growth rates of output and national income. The CEMA member countries have remained the most dynamically developing group of countries in the world.

Stable and dynamic development of the productive forces of the socialist countries is inseparably bound up with realizing not only the advantages of the socialist system within the framework of the individual national economies, but also socialist international relations, which create the prerequisites for convergence of the socioeconomic development of the fraternal countries and thereby for more active inclusion of the national economic complexes in mutually advantageous division of labor. As pointed out at the 26th CPSU Congress, the process of comprehensive and gradual convergence of the socialist states is continuing to develop without erasing the specific national features and historical peculiarities of the socialist countries. The diversity of the organizational forms in the economies of the fraternal countries and in the structure of economic mechanisms by no means presupposes any effort to make them uniform or to standardize them.

Without examining in detail the historical pattern of the comprehensive convergence of the socialist states,<sup>2</sup> we will note that a strengthening of the commonwealth of the socialist states in political and economic relations is an inevitable consequence of accomplishment of this process. At the same time opportunities are constantly growing for fuller utilization of the advantages of the international socialist division of labor and for better combination of national and international factors in economic and social development. And this tends to augment the attractive force of the countries of the socialist commonwealth on an international scale. The mere fact that in a historically short period of time the substantial differences in levels of economic development among the European CEMA member countries have by and large been eliminated and that, for example, the gap in levels of per capita output have in just 30 years (from 1950 to 1979) dropped from 3.2:1 to 1.4:1 with respect to national income and from 5:1 to 1.6:1 in terms of industrial output,<sup>3</sup> provides eloquently evidence of the fundamental advantages of both the socialist system and mutual relations among the fraternal countries, which, as noted by the 26th CPSU Congress, have effectively become relations among peoples.

We should also emphasize that the objective process of conversion does not turn the fraternal countries into any sort of closed grouping, but on the contrary presupposes that they develop relations in all fields on a broad scale with other states, that they participate actively in all spheres of international life, and that they exert an ever greater influence toward progressive change of the character of international relations.

The dynamism of the mutual cooperation of the fraternal countries is confirmed by many facts:

- i. as already noted, the rates of economic development of the CEMA member countries over the past decade have been twice as high as those of the countries of capital;
- ii. utilizing national and international factors of development, the less developed (in the past) fraternal countries have taken a very large step forward; now the European member countries of CEMA can no longer be divided into industrial and agrarian countries, since the share of industrial output predominates in each of them;
- iii. the share of industrial production of the CEMA member countries has grown substantially; during the decade the volume of their industrial output grew 84 percent, and the growth rates of industrial output were nearly three times as high as those in the countries of the EEC;
- iv. those branches of industry which determine technical progress in the national economy have been developing in the fraternal countries at rapid rates, and as a consequence the share of the leading branches (machinebuilding, electronics and the chemical industry) has grown substantially;
- v. the growth of the visible trade among the CEMA member countries exceeded the growth rates of production, national income and industrial output over the decade by 3.3-fold, reaching 121 billion rubles, which is direct evidence that international socialist division of labor is becoming more intensive and is a result of the interaction of the socialist states which was organized according to plan.

In addition to the development of mutual foreign trade, other forms of foreign economic relations have also become widespread; they are diverse in their content, they are long-range and large-scale, they are stable in their character, and they possess considerable potential for growth and improvement. The program entitled "Interkosmos," in which international teams of all the CEMA member countries actively participated, working not only for the needs of the national economy and science, but also performing a political mission of very great importance, is a splendid embodiment of the breadth, diversity and convincing results of cooperation of the fraternal countries.

At the 35th CEMA Session held in July 1981 in Sofia representatives of the fraternal countries stressed the special role of the Soviet Union both in development of all the processes of integration and also in the growth of the economic potential of the countries of the socialist commonwealth. Our

country has been making a decisive contribution to supplying fuel and raw materials to the CEMA member countries. Deliveries from the USSR of petroleum,<sup>5</sup> natural gas, bituminous and better coal, iron ore and rolled steel products, cotton and other raw materials for the fraternal countries have had very great importance. We should note in this connection that in spite of the difficulties caused by the deteriorating conditions for extracting many types of energy resources, their exports from the USSR to the fraternal countries were 20 percent greater in the 11th Five-Year Plan than in the previous one. Moreover, the USSR is delivering fuel and raw materials to the fraternal countries at prices considerably lower than the prices of the world market.<sup>6</sup>

The USSR is also the largest supplier to the countries of the commonwealth of the most important types of up-to-date machines and equipment, including nuclear reactors, electric power generators, airplanes, machine tools and turbines. Many major enterprises of the leading branches of industry of the fraternal countries have been furnished with Soviet equipment. The power generating capacities built with the aid of the USSR in the socialist countries exceed 36 million kilowatts. In the last 5-year period the USSR delivered to the CEMA member countries various goods worth 98 billion rubles, or 2.1-fold more than in the years of the 9th Five-Year Plan. Enterprises built in the socialist countries with the participation of the USSR are making it possible to produce about 23 million tons of pig iron a year, more than 27 million tons of steel, about 30 million tons of rolled products of ferrous metals, to refine about 38 million tons of petroleum, and so on.

Of course, cooperation within the framework of CEMA also provides definite advantages for our own country. During the last 5-year period the CEMA countries provided as much as 40 percent of the replenishment of the vessels of our river and maritime fleets, 35 percent of our railroad passenger cars, 12 percent of the buses, 15 percent of the stocks of our retail trade for finished garments, footwear, furniture and canned goods. Many enterprises of the USSR have been furnished equipment obtained from the fraternal countries. In the seventies there were larger imports from the CEMA countries of industrial and agricultural goods, for which there is a steady demand in our country. Those commodities include household electrical appliances and lighting fixtures, sewing machines, photographic and motion-picture film from the GDR; footwear, dishware and jewelry from Czechoslovakia; medicine from Hungary; sewn garments and knitwear from the GDR, Poland and Romania; fruit and vegetables from Bulgaria, Hungary and Romania. Whereas in the last 5-year period the USSR received goods from the fraternal countries worth 90 billion rubles, in the new 5-year period it will import in exchange for its own goods up-to-date machine equipment worth more than 50 billion rubles and consumer goods worth 40 billion rubles.<sup>7</sup> This means that exchange with the countries of the socialist commonwealth comprises the largest part of Soviet foreign trade.

The dynamism and reproduction of mutual relations, the mutual benefit they afford, and consistent pursuit of the course of socialist economic integration are making it possible for the fraternal countries to seek out additional resources for performing the tasks of socialist and communist construction. In the eighties the countries of the socialist commonwealth face tasks of truly historic significance on a still greater scale: achieving during that 10-year



period intensive production and scientific-technical cooperation and more extensive use of the opportunities of foreign economic relations for a further rise in the efficiency of social production.

#### New Horizons in Raising the Efficiency of Social Production

The success achieved in economic development of the countries of the socialist commonwealth indicate that at the present time they have advanced to new frontiers of economic development which make it possible for them to confront still more complicated tasks in the economic and social spheres. The direction of economic policy in the eighties which the socialist commonwealth has in common is comprehensive intensification of production, raising its technical level, the qualitative indicators of development, and the level of management. The provision of the "Basic Directions for the Economic and Social Development of the USSR Over the Period of 1981-1985 and Up to the Year 1990" concerning the need for optimum use of the advantage of the international division of labor and the capability of foreign economic relations to raise the efficiency of social production commands one's attention.<sup>8</sup> The task is set of developing in every way mutually advantageous relations with the socialist countries, taking maximum advantage of the benefit of socialist integration to switch the economy onto the rails of predominantly intensive development.

The economy of our country and of the other fraternal countries has entered a period of its development when selection of the optimum relationship in utilizing resources of economic growth is taking on ever greater importance. And this means that in the new 5-year period the countries of the commonwealth are putting emphasis not on faster input of more and more new raw materials and energy resources, but above all on more economical use of everything they possess. Consequently, intensifying cooperation in the interests of the intensification of production means achieving not only larger volumes of mutual deliveries, but also making more economical use of primary resources and obtaining thereby a larger economic benefit on the basis of study and utilization of valuable mutual experience. In the interest of making mutual relations more effective and intensive new measures had to be adopted to improve cooperation in addition to those envisaged by the Comprehensive Program.... In the field of planning activity they include the drafting of long-range target programs of cooperation (DTsPS), long-range bilateral programs of production specialization and industrial cooperation, and also coordinated plans of multilateral integrative measures (SPMIM).

The first Coordinated Plan of Multilateral Integrative Measures (1976-1980), which called for carrying out about 30 large-scale projects with a total cost of about 9 billion transfer rubles, has already been successfully fulfilled. At the 35th CEMA Session a second Coordinated Plan of Multilateral Integrative Measures was approved for the 1981-1985 period; it provides for joint efforts in building a number of economic projects, development of production specialization and industrial cooperation, cooperation in the fields of science and technology, and adoption of standards. It also outlines measures to promote economic progress in SRV, Cuba and the Mongolian People's Republic.<sup>9</sup>

The DTsPS, which were drafted in a short period of time and approved at two CEMA sessions (the 32nd and 33rd), have been a major step forward in methods of solving key economic problems of the countries of the socialist commonwealth. They are a new form of joint planning activity. Five of these programs (in the sectors of fuel, energy and raw materials; machinebuilding; agriculture and the food manufacturing industry; consumer goods; and transportation) call for carrying out key programs of interaction which will be implemented in the eighties. The 26th CPSU Congress adopted the course of consistent implementation of these programs, which have embodied the strategy of cooperation and specific measures to be carried out on the basis of steady growth and higher efficiency of social production in order to ensure a rise in the standard of living and cultural level of the masses of the people. They embrace 340 major measures (more than 200 of them will be carried out on the basis of multilateral agreements), including 117 problems in science and technology.<sup>10</sup>

The DTsPS have become a strong foundation for coordination of the national economic plans of the CEMA countries for the 1981-1985 period. At the same time, since the period they cover extends up to the year 1990, they will serve like a "bridge" between the successive 5-year plans--the 11th and 12th, and will help in achieving continuity in planning. The second Coordinated Plan of Multilateral Integrative Measures (1981-1985), mentioned above, is also being shaped on the basis of the multilateral agreements signed to elaborate the DTsPS.

It is significant that for every measure included in the DTsPS all the problems have been solved related to conducting R&D projects, providing financial, physical and labor resources for capital construction, setting up new production or expanding existing production, supplying raw materials, supplies, transportation, and so on, and solutions have also been found to such economic problems as credit financing, prices and other conditions of mutual product deliveries.

If we were to briefly describe the most important features of each of the five programs, then we should note that the DTsPS in the field of energy, fuel and raw materials provides in the eighties for planned restructuring of the fuel and energy balance toward a diminished share of petroleum consumption and an increase in the relative share of the use of nuclear power. And this means that the main direction in cooperation of the fraternal countries under this program will be nuclear power production. Provision is also made for further unification and development of the national power systems of the European CEMA member countries. Geological explorations will be extended and expanded on Cuba and in Mongolia.<sup>11</sup> Thus the principal goal of this program, which was one of the first to be drafted, is to cover the economically sound requirements of the fraternal countries for the most important forms of energy resources and also for ferrous and nonferrous metals, chemical raw materials and other raw materials over the period up to the year 1990. Attributing very great importance to carrying out the energy program, the USSR is proposing to interested socialist countries that they participate in carrying out the project for development of the unique gas production complex in Western Siberia and also in working on the problem of producing synthetic fuel from the coal of the Kansk-Achinsk basin.

It would not be any exaggeration to say that achievement of practically all the goals outlined in the DTsPS requires a corresponding machinebuilding base, which must be developed by the most economical method, using the advantages of the international socialist division of labor. That is why machinebuilding is the common denominator of the energy, raw materials, food, transportation and other tasks. In the 11th Five-Year Plan a large step is to be taken toward retooling many branches of Soviet industry, and the machinebuilding base of the commonwealth of CEMA countries is to be strengthened. The DTsPS in the field of machinebuilding attributes very great importance to creation and to coordination of series production of the relevant lines of machines, to the transition to gradual automation of production processes, and to the use of microelectronics and industrial robots.

Two of the five DTsPS, specifically the program in the field of agriculture and the food manufacturing industry and also the one in the consumer goods field, are aimed directly at a further rise in the material and cultural level of life of the peoples by virtue of intensification of domestic production in every country and intensification of their economic and scientific-technical relations. Performance of these programs will contribute to supplying many consumer goods to the workers of the fraternal countries, to satisfying the optimum needs of the public for the principal foodstuffs, clothing and durable consumer goods, and also to the creation of reserves. "We all have an interest," Comrade L. I. Brezhnev remarked at the 26th CPSU Congress, "in making the socialist market capable of satisfying the growing needs of the countries of our commonwealth."<sup>12</sup> Development of the production for export of a number of products in countries possessing favorable climatic conditions for that purpose is being proposed toward that end: raw cotton in the USSR, poultry and grapes in Hungary, and sugar and citrus fruit on Cuba. Important goals of the program include raising the quality of foodstuffs along with intensification of agricultural production and the food manufacturing industry, preventing losses in production, in transportation and in storage of raw materials and foodstuffs. The special food program which is now being drafted in our country and which should guarantee a sizable increase in the production of farm products, will also contribute to achievement of these goals.

As for the DTsPS in the sector of transportation connections, it is linked to the plans for development of the branches of material production and presupposes fuller satisfaction of the needs of the fraternal countries for mutual freight and passenger service through interrelated use of all branches of transportation. To be specific, there will be an increase in the traffic of freight in containers within the unified container system; the volume of operations in shipping goods in containers will increase approximately 2.5-fold in 1985 and fourfold in 1990.<sup>13</sup>

Thus an unswerving rise in the prosperity and culture of the peoples of the fraternal countries is the ultimate goal of all the DTsPS, as well as of the other forms of cooperation.



## The Course Aimed at Intensive Cooperation of the CEMA Member Countries

New multiannual tasks in the field of elaboration of international specialization and cooperation both in physical production and also in science and technology were advanced at the 26th CPSU Congress and also at the regular congresses of the communist and worker parties of a number of countries in the commonwealth. "The CPSU and other fraternal parties," remarked the Report Address of the CPSU Central Committee to the 26th party congress, "are adopting the course toward transforming the next two 5-year periods into a time of intensive industrial and scientific-technical cooperation among the socialist countries. Reality itself is setting the task of supplementing the coordination of plans with correlation of economic policy as a whole."<sup>14</sup> Pursuit of this course requires an organic combination of multilateral and bilateral forms of cooperation. The bilateral long-range programs for production specialization and industrial cooperation between the USSR and the European countries of CEMA which have been signed in recent years and which the fraternal countries undertake to carry out in the 11th Five-Year Plan, are playing a large role in this connection.<sup>15</sup> Such programs afford the possibility of utilizing to a considerable extent the advantages of industrial cooperation and of large-scale industrial production and the advances of the scientific-technical revolution. This in turn creates a reliable basis for raising the level of mutual complementarity of the economies of the CEMA countries and their mutually advantageous cooperation.

Within the framework of the bilateral programs--master charts for specialization and cooperation in the domain of material production--the principal economic sectors of the fraternal countries are intimately involved in the process of integration; at the same time the structure of the national economic complexes is also being improved. Long-range programs of this kind are being used for the first time in the practice of the cooperation of the fraternal countries. They make it possible to link the DTsPS drafted previously and specific measures to implement them with the bilateral agreements, to detail the DTsPS by countries, to supplement the cooperative projects outlined in them with new ones, and to select the most advantageous alternatives for the joining of efforts and utilization of resources in carrying them out. That is why the 26th CPSU Congress oriented our country's planning agencies and economic authorities toward consistent realization of these programs, in which the internal and external factors of development of the sectors of the economy are optimally combined. This is achieved through joint determination in bilateral programs of the fundamental directions of coordinated economic and scientific-technical policy in specific sectors and through the comprehensive approach to solving the major national economic problems indicated. The first master plan for specialization and cooperation in the domain of physical production was signed between the USSR and Bulgaria in Sofia in September 1979 and covers the period up to the year 1990. Similar programs for cooperation of the USSR with the other European CEMA countries were drafted by mid-1980.

Mutual deliveries on the basis of the agreed specialization attained a level of 25 billion rubles in 1980 (as against 330 million rubles in 1970). Even now about 120 multilateral and more than 1,000 bilateral agreements on production specialization and industrial cooperation are in force.<sup>16</sup> It is

significant, for example, that the volume of exports of specialized products of machinebuilding in mutual deliveries of the CEMA countries is growing twice as fast as total exports of machines and equipment, while the relative share of products covered by specialization was already 35 percent in 1979. At the present time the focus in carrying out the long-range programs for production specialization and industrial cooperation is shifting to the sectoral level. The task is to develop direct relations among ministries, associations and enterprises of the CEMA countries. In this context the role of the agreements on specific products being concluded by the enterprises directly is growing. Enhancement of the activity of production collectives in developing relations with enterprises of the fraternal countries is playing an important role.

It would be difficult to overestimate the role and significance of devising and carrying out an agreed technical policy, which opens up new opportunities for concentration of the production of progressive up-to-date products and lines of machines. The main direction which cooperation takes here is thorough production specialization in manufacturing equipment at a high technical-and-economic level. Branches, subbranches and types of production which are specialized in the international context are being shaped on the basis of the development of production specialization (especially specialization by assembly and component) and industrial cooperation in the countries of the commonwealth.<sup>17</sup> On this basis, for example, the building of electric and fuel-powered industrial tractors is developing in Bulgaria, bus manufacturing in Hungary, shipbuilding, chemical and textile machinebuilding, production of forging and pressing equipment and rail passenger cars in the GDR, shipbuilding, production of roadbuilding and construction machines in Poland, the production of metallurgical and chemical equipment and motor vehicle manufacturing in Czechoslovakia, and the production of oil field equipment and locomotive building in Romania. Products manufactured on the basis of specialization are being delivered to all the interested countries. Their production and operation are subject to uniform norms and standards.

Under present conditions it is becoming more important to collectively develop and apply to production resource-saving technologies which ensure reduction of energy intensiveness, materials intensiveness and labor intensiveness of the product and a rise in the output-capital ratio. The CEMA countries have achieved considerable success in joint solutions of many production and scientific-technical problems. Over the 1971-1979 period more than 16,000 joint theoretical and applied research projects were conducted, more than 1,600 new designs of machines, machinery and devices were developed, more than 1,200 manufacturing processes were improved, and about 1,300 types of new materials, products and preparations were created.<sup>18</sup> At present more than 3,000 scientific research and project planning and design organizations and VUZ's of the CEMA member countries, including about 200 scientific institutions of academies of sciences, are participating in multilateral cooperation.<sup>19</sup>

But in the light of the higher requirements being advanced concerning the scientific potential of the countries of the commonwealth, we should note that the level of new technology, equipment and instruments and also of the technical designs and production technologies still does not always meet world standards. To no small degree the reason for this, as noted in the press of

fraternal countries, is the squandering of personnel and the inclusion of development projects with little promise in the list of scientific topics for cooperation. It is therefore a task of paramount importance to improve coordination of bilateral and multilateral scientific-technical cooperation and to make fuller and more optimum use of the entire potential and all the resources of the countries of the socialist commonwealth.

It is important that the joining of the efforts of the interested countries guarantee consistent and step-by-step coverage of the entire "science--technology--production" cycle.

### Socialist Integration Is Gaining Speed

The results of the economic and social development of the countries of the socialist commonwealth were thoroughly and comprehensively analyzed at the 26th CPSU Congress and at the congresses of the fraternal parties which took place in the 1979-1981 period. On those occasions the discussion pertained not only to the achievements, but also to the complicated problems and difficulties that have arisen. Taking into account the specific features of their own countries and the overall patterns of development of socialism, each of the fraternal countries outlined specific ways of solving the problems which have become urgent and of overcoming adversities and shortcomings.

The main direction in economic development of the USSR and a majority of the other CEMA countries as well as of their economic cooperation throughout the eighties is further intensification of production and effective use of economic potential. Now an aggregate economic benefit can be achieved through fuller utilization of both national and also international factors of production which speed up economic growth. V. I. Lenin's historic prediction that socialism would create "new and higher forms of human intercourse when the legitimate needs and progressive aspirations of the working masses of all nationalities would be satisfied for the first time through international unity ..." is being embodied in reality.<sup>20</sup>

Over their history of more than 30 years the foreign economic relations among the socialist states have invariably been based on the principles of socialist internationalism, which organically combine mutual benefit and comradely mutual assistance. Gradually, but unswervingly and consistently, concrete economic and organizational forms of the international socialist division of labor have taken shape.

Socialist economic integration (its content has been defined in the Comprehensive Program for Further Extension and Improvement of Cooperation and for Development of Socialist Economic Integration) has become the material foundation of the process of comprehensive convergence of the socialist countries in the domain of economics, politics and ideology. In the history of their cooperation the socialist countries have traveled the road from carrying out individual integrative measures to the transition to comprehensive and coordinated economic integration, to higher forms of that integration such as the DTsPS, SPMIM and others examined above. The social orientation of integration, its inclination toward increasing the prosperity of the workers, toward the

struggle for peace and security of peoples, is being manifested in ever greater relief.

The Crimean meetings of leaders of the fraternal parties and countries which took place in 1981 (such meetings have become a good tradition and a factor of very great international significance) demonstrated once again the correctness of the course which has been adopted toward integration, which is opening up prospects and ensuring favorable and, most important, stable prerequisites for the socioeconomic development of the countries of the socialist commonwealth in the eighties.

In pursuing this agreed course a substantial benefit has come from the activity of the international organizations of the CEMA countries in the domains of production, science, transportation, monetary affairs, etc. These organizations have become an authentic instrument in cooperation of the fraternal countries. They have established close contacts with the Council for Mutual Economic Assistance, an organization for general and comprehensive economic cooperation whose activity is the mechanism which is carrying out socialist economic integration.

Projects on the largest scale have been put into operation within our country in recent years on the basis of the joint efforts of the CEMA countries: the "Soyuz" gas pipeline, which is unique in its scale (2,750 km long), through which 15.5 billion cubic meters of gas is flowing every year to meet the needs of the fraternal countries; the Kiyembayev Asbestos Mining and Dressing Combine with an output of 500,000 tons; the first phase of the Ust'-Il'msk Pulp Mill with a capacity of 500,000 tons of high-quality pulp per year (the facilities put into operation have an output of 250,000 tons); new capacities for the production of ferriferous raw materials and ferroalloys (near Kursk and Belgorod); the Novovolynsk plant which manufactures equipment for the electrical equipment industry. The 750-kv Vinnitsa (USSR)--Albertirsa (Hungary) intersystem power transmission line has been put into service. In Mongolia the large "Erdenet" Combine has been built for the production of copper and molybdenum concentrate along with other projects.

In the years of socialist construction the fraternal countries have acquired quite considerable constructive experience in the organization of production and management and in solving national economic problems. The 26th CPSU Congress called for a study of experience in the astute organization of the operation of agricultural cooperatives in Hungary, of production innovation and conservation of energy, raw materials and supplies in the GDR, of the social security system in Czechoslovakia, of development of forms of agroindustrial cooperation in Bulgaria and in a number of other European socialist countries.<sup>21</sup> Use of each other's accumulated experience will help to solve problems more effectively in the economic and social development of the socialist states and will promote the process of their mutual convergence.

Socialist international competition is becoming a natural and organic part of the new form of social relation between the workers of the fraternal countries which has been engendered by world socialism and the means of authentic internationalist education. International competition is a notable trait of the



present time. It deepens the content of socialist competition and diversifies its forms. More than 1,000 Soviet enterprises which have permanent production relations with enterprises of other CEMA member countries are regularly exchanging experience, are utilizing the best attainment of work collectives of the countries of the commonwealth, and are participating in international competition. This kind of competition is developing in various forms: friendship melts of steelmakers, international competitions of women textile workers, international schools of progressive know-how, competition at joint construction sites, brother cities, within border areas, at transportation junctions and many other forms. At the present time about 1,300 production collectives of the USSR are maintaining permanent relations with approximately 1,500 enterprises of the fraternal countries.<sup>22</sup>

Since extensive factors of the CEMA countries are mainly exhausted, emphasis is being put on intensification of the economy. That accounts for the urgent need for coordination above all of those areas of economic policy which directly enter into the sphere of their mutual cooperation and which are aimed at solving the problems in intensification of the economy which all the CEMA countries have in common.<sup>23</sup>

At the present time, the criterion of the optimality of proportions and optimality of rates of development of a considerable number of sectors of the economy can be chosen so as to take into account the international socialist division of labor. Only by developing and intensifying foreign economic relations with the fraternal countries is it possible to satisfy the diverse needs of the peoples of these countries within the limits of the volumes of production obtained more fully and rapidly than through mere domestic restructuring of national production structures. Developing the system of foreign economic relations faster than the rate of growth of the scale of production makes it possible to successfully satisfy the continuously changing multilevel requirements of society. It is on these premises that the 26th CPSU Congress and regular congresses of the fraternal parties discuss the tasks and prospects for development of the world socialist commonwealth and the urgent problems of socialist economic integration. The expanding mutual relations among the socialist countries embody practically unlimited possibilities for unification of their efforts in performing the increasingly complicated and ever larger tasks of building socialism and communism.

The decree of the CPSU Central Committee entitled "On the 60th Anniversary of Formation of the Union of Soviet Socialist Republics" points out: "Reality has confirmed Lenin's prediction that the new social system would give rise to altogether different international relations free of the discrimination and the dominance and subordination typical of the capitalist world. The fraternal countries of socialism are setting the example of such relations."<sup>24</sup> The deeper the process of socialist economic integration goes, the more visible to the entire world the attainments which have been put at the service of the working people, the more vividly the example of the new international relations will be seen and the greater its importance will be in the historical competition between socialism and capitalism for the future of the world's people. This accounts for the paramount importance of the problems of strengthening the world socialist system and cooperation to each of the

countries making up that system. It is especially important here to preserve properly and creatively summarize the experience already acquired, experience which "provides convincing evidence that loyalty to the principles of Marxism-Leninism and socialist internationalism and close interaction of the fraternal countries in all domains make it possible to correctly combine the common and national interests of the socialist states, to resolve successfully the contradictions and difficulties that have arisen in the course of development, and for every country and the entire socialist commonwealth to move forward confidently. The Council for Mutual Economic Assistance and the Organization of the Warsaw Pact serve that purpose reliably."<sup>25</sup> Reliance on that experience and reliable determination of the prospects for further development of the socialist commonwealth of peoples, determination placed on a sound scientific footing, are one of the most important elements of the entire activity of the fraternal socialist states, one of the most significant aspects of that gigantic contribution which they have already made and are making to the history of humanity and to determination of its future roads toward progress and the happiness of all peoples.

#### FOOTNOTES

1. "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, 1981, p 11.
2. On the patterns of convergence of the socialist states see: B. Pugachev, "On the Process of Convergence of the Socialist States," EKONOMICHESKIYE NAUKI, No 3, 1979.
3. "Razvitoy sotsializm: problemy teorii i praktiki" [Advanced Socialism: Problems in Theory and Practice], Moscow, 1981, p 344.
4. L. Tarasov and V. Shishankov, "The CEMA Countries in the Seventies," POLITICHESKOYE SAMOOBRAZOVANIYE, No 10, 1981, p 60.
5. By virtue of their own production and mutual deliveries the CEMA countries cover approximately nine-tenths of their needs for petroleum, whereas this share for the EEC countries is about 11 percent (NOVOYE VREMYA, No 28, 1981, p 5).
6. A. Sokolov, "New Horizons of the Socialist Commonwealth," MIROVAYA EKONOMIKA I MEZHDUNARODNYYE OTNOSHENIYA, No 9, 1981, p 22.
7. "Materialy XXVI s"yezda KPSS," p 8; I. F. Motorin, "Kursom sotrudnichestva" [On the Course of Cooperation], Moscow, 1981, p 14.
8. "Materialy XXVI s"yezda KPSS," pp 195-196.
9. Fulfillment of the coordinated plans of multilateral integrative measures necessitated introduction of special sections in the national economic plans of the CEMA countries on the planning of integrative measures. The SPMIM has become the connecting link among the national economic plans.



10. EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV, No 3, 1980, p 30.
11. "Mir sotsializma--torzhestvo velikikh idey" [The World of Socialism--Triumph of Great Ideas], Moscow, 1981, p 85. The scale of construction of nuclear power plants in the eighties is so large as to make it possible for the European countries of CEMA and Cuba to obtain an additional output of about 250 billion kilowatt-hours of electric power every year.
12. "Materialy XXVI s"yezda KPSS," p 8.
13. Yu. A. Pekshev, "Dolgostrochnyye tselevyye programmy sotrudnichestva stran-chlenov SEV" [Long-Range Target Programs for Cooperation of the CEMA Member Countries], Moscow, 1980, p 174.
14. "Materialy XXVI s"yezda KPSS," pp 7-8.
15. Agreement on preparation of bilateral long-range programs was achieved in 1978 during the Crimean meetings and in 1980 the drafting of such programs was completed between the USSR and Bulgaria, the USSR and Hungary, the USSR and the GDR, the USSR and Poland, the USSR and Romania, and the USSR and Czechoslovakia.
16. "Materialy XXVI s"yezda KPSS," p 7; "Sovetskaya ekonomika na novom etape" [The Soviet Economy in the New Stage], Moscow, 1981, p 188.
17. Among the most important agreements in the field of production specialization and industrial cooperation of the fraternal countries are those concerning the production of electronic computers, production of equipment for nuclear power stations, shipbuilding, chemical and petrochemical equipment, and electrical equipment.
18. O. Chukanov, "Production Specialization and Industrial Cooperation. New Possibilities for Cooperation of the CEMA Member Countries," PLANOVOYE KHOZYAYSTVO, No 9, 1980, p 29; PRAVDA, 7 July 1981.
19. "Mir sotsializma v tsifrakh i faktakh, 1979" [The World of Socialism in Facts and Figures for 1979], Moscow, 1980, p 101. As is well known, approximately one-third of the scientists of the world's countries are working in the CEMA countries. The sphere of scientific-technical activity of the fraternal countries employ 13 percent of all the engineering and technical personnel and mental workers, and those countries account for more than one-third of the world's applications to patent inventions and about 20 percent of the patents issued in the world ("SSSR i sotsialisticheskaya ekonomicheskaya integratsiya" [The USSR and Socialist Economic Integration], Moscow, 1981, p 295).
20. V. I. Lenin, "Polnoye sobraniye sochineniy" [Complete Works], Vol 26, p 40.
21. The journal KOMMUNIST (No 15, 1981), for example, has carried a selection of articles on the topic "From the Experience of the Socialist

Commonwealth," in which authors from Bulgaria, Hungary, the GDR and Czechoslovakia wrote about agroindustrial integration in Bulgaria, the achievements of Hungarian agriculture, scientific development and its strategy in the GDR, and social welfare policy in Czechoslovakia.

22. "Sovetskaya ekonomika na novom etape" [Soviet Economics in a New Stage], p 182.
23. As for Mongolia, Vietnam and Cuba, where extensive factors are continuing to perform an important role, the USSR and the other fraternal countries are extending them diverse aid which takes into account the specific conditions of building socialism in those countries.
24. "On the 60th Anniversary of Formation of the Union of Soviet Socialist Republics," decree of the CPSU Central Committee, PRAVDA, 21 February 1982, p 1.
25. Ibid.

COPYRIGHT: Izdatel'stvo "Vysshaya shkola", "Ekonomicheskiye nauki", 1982

7045

CSO: 1825/91

LONG-TERM PROGRAM FOR INTERNATIONAL SPECIALIZATION, COOPERATION OF CEMA STATES

Moscow IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA in Russian No 4, Jul-Aug 82 pp 107-115

[Article by S. N. Sil'vestrov: "Methodological Fundamentals of Elaborating Long-Term Programs for International Production Specialization and Cooperation Among the CEMA Countries"]

[Text] The article investigates the problem of selecting the priority directions of production specialization and cooperation among the countries of the socialist commonwealth, on the basis of a program of specialization and cooperation. The possible limits and prerequisites for creating such a program are analyzed on the example of the engineering industry.

Intensification of the international division of labor among the CEMA countries in the sphere of material production requires perfection of the existing forms for the planned management of this process, and also the search for new forms. Multilaterally elaborated long-term programs for specialization and cooperation in the leading, priority branches and spheres of production could become one of the possible forms. The task of such programs should include the reconciliation of the bilateral long-term programs for production specialization and cooperation with the multilateral forms of production cooperation within CEMA, the selection of the priority directions of developing such cooperation, and also the perfection of the sectoral scientific-technical and production co-operational relations among the countries of the socialist commonwealth.

1. Economic Role of the CEMA Countries' Production Specialization and Cooperation, and the Problems of Their Further Perfection

The Complex Program of Socialist Economic Integration adopted in 1971 provided an important stimulus for accelerating the processes of production specialization and cooperation among the CEMA countries. The framework of these processes expanded considerably during the past decade.

Deliveries of specialized products merely on the basis of specialization agreements reached nearly 25 billion rubles in 1980 [1]. The number of concluded agreements is increasing with each year, particularly in such sectors as

engineering, radio engineering and electronics. Specialization and cooperation are spreading to ever newer production sectors, and the concluded agreements are being extended. The number and role are increasing of substantial foreign-trade transactions that stimulate production specialization, converting it into an important factor of economic growth and of intensifying the international division of labor within CEMA. The rise of the export quota in production, and of the import quota in the use of specialized products, confirms the development of the mentioned processes. For example, the export quota increased from 31.7 percent in 1970, to more than 40 percent in 1980; and the import quota increased to 40 percent [2].

New supplementary measures for developing production specialization and cooperation among CEMA countries were outlined at the 34th and 35th sessions of CEMA. Essentially these measures are intended to make this form of international socialist cooperation more flexible and more comprehensive.

A number of trends that appeared in the international socialist division of labor during the 1970's directed the CEMA countries' attention more closely to the problems of making their industrial and scientific-technical potential more effective by utilizing the advantages inherent in international production specialization and cooperation. This was reflected in the agreements reached at the Crimea meetings of the CEMA countries' leaders, directing the CEMA countries to intensively develop international production specialization and cooperation in the course of fulfilling their current five-year plans.

In the economic relations among CEMA countries there are now in force hundreds of bilateral specialization and cooperation agreements, and scores of multilateral ones. But while the former are based on bilateral long-term programs for production specialization and cooperation, the latter (the multilateral agreements) essentially lack such a specific basis and continue to develop in the traditional manner--by concluding ever newer agreements.

A multilateral production specialization and cooperation agreement is an important additional guaranty of a stable market for the output, and it supplements the arsenal of instruments through which the mechanism of foreign trade functions. But it has relatively little influence on perfecting the level and structure of production itself, and on applying to production the advances in science and technology. There are also discernible tendencies toward the fragmentation of integrational cooperation into relatively narrow forms of production that are formulated institutionally and legally and therefore seem to elude the CEMA organs' sphere of activity.<sup>1</sup>

The accumulated experience with production specialization and cooperation among the CEMA countries indicates not only the expansion of the sphere of the international socialist division of labor, but also the growing complexity of the processes that are taking place, and their long-term nature. A significant proportion of the agreements concluded or extended for ten-year periods involve substantial losses in conjunction with their realization. Moreover, considerable inertia is characteristic of the large-scale measures relating to production specialization and cooperation, and this causes a very noticeable difference in the time when the results can be felt in the various spheres of the CEMA countries' economies and in their international economic cooperation. The situation



is further complicated by the fact that international specialization develops predominantly within sectors, whereas in the economies of the CEMA countries a shift is taking place toward the introduction of complex planning and of an intersectoral approach to the solution of their economic problems.

As international specialization and cooperation within sectors intensify, these processes become more dependent on the influence of external relations and on the conditions of development for each sector separately. Intersectoral relations are becoming more complicated and detailed, forming a ramified economic production system that is difficult to regulate. Changes within it on the basis of a more intensive division of labor must be coordinated through the higher levels of management and require complex reconciliation at many levels. Under these conditions the acceleration of the process of international production specialization and cooperation encounters additional difficulties, especially if the international and national economic mechanisms do not stimulate this process adequately. In the final outcome, at a certain stage of cooperation, this situation can lead to extensive duplication of production and reduces the economic effectiveness of international specialization and cooperation, not only for the entire national economy but for its individual sectors as well.

It is obvious that production specialization and cooperation at a certain stage require changes of some of their points of reference and also substantial perfection, just like any other socioeconomic process.<sup>2</sup> This raises the timely question of elaborating multilateral long-range programs for production specialization and cooperation.

For the successful fulfillment of the ultimate objectives set in the long-term target programs for cooperation it is necessary to apply the principles of a program approach also to the conditions and instruments that ensure the realization of these objectives. The application of a target-program approach to the set of conditions and instruments for achieving the ultimate objectives is an important prerequisite for the realization of long-term target programs. Detailed and complex programming of development provides a foundation for the socialist commonwealth's more flexible adaptation to possible changes that might arise in the economic situation in the course of fulfilling the outlined tasks. To date, however, such an approach essentially has not been worked out, and this of course detracts from the complex nature of the long-term target programs for cooperation and could have an unfavorable effect on the results of their realization.

Under these conditions there is first of all a need for methodological principles in drafting long-term programs for specialization and cooperation in the priority sectors of production. In the course of this it will be necessary to devote special attention to coordinating the measures based on such programs with the tasks of the long-term target programs for specialization, and with the basic objectives of the participating countries' economic development.

The approach to programming production specialization and cooperation in coordination with the ultimate objectives of developing a specific production complex makes it possible to regard specialization and the related cooperation as an instrument for achieving these objectives. Thus international production specialization and cooperation are included in the long-term target programs' set of functional objectives, and the objectives of the program for international

specialization and cooperation itself become intermediate objectives in relation to the ultimate objectives.<sup>3</sup> Thanks to the program, international production specialization and cooperation become an integral system. Here the program must be regarded as the basic organizational and economic instrument for solving the tasks of scientific-technical and production development within the framework of the long-term target programs for cooperation. At the same time, the programs do not replace the contractual forms of specialization, but they permit a more general and purposeful approach to the division of labor in production.

The content of the programs must include a set of appropriate measures for international specialization and cooperation in the sectors and spheres of production that are combined into a single complex on the basis of their typical common characteristics. In the final outcome the programming of international specialization and cooperation is a prerequisite for raising the concentration of production that is homogeneous in terms of design and technology, on the basis of a sensible division of labor among the countries. The probable shortening of the product list will essentially mean the perfection of the produced output's structure, because the output will increase of the economically most effective and technologically most advanced products. For the participating countries this provides a kind of "fan of alternatives" from which they can select their priority directions of specialization, and it becomes possible to manipulate more freely the resources allotted for the development of production cooperation. The program strengthens the centripetal tendencies of activity for the plan-conforming realization of the division of labor in engineering, thanks to a uniform foundation for forming a real system of contractual production specialization and cooperation also in the other industries of the countries belonging to the socialist commonwealth.

In the elaboration of the proposed program it is possible to utilize the experience that the individual CEMA countries have gained in drafting national economic and sectoral programs. The first attempts to elaborate long-term multilateral production specialization and cooperation programs were undertaken by CEMA organs in the sectors of radio engineering and electronics. All basic types of products were classified into several groups, each of which constitutes a coordinated, unified and consolidated list of products. Indeed, in the consolidated product groups it proved easier to elaborate and reconcile the directions of specialization by countries, i.e., within the framework of the programs the individual countries had a greater degree of freedom and more variants from which to choose the directions of their specialization. Agreements for international production specialization and cooperation are concluded on the basis of the programs' product lists, and new products are added from the same unified product lists. This organizational solution of a program immediately introduced stability in the realization of international specialization and cooperation within the framework of CEMA. The grouping of products into specified product lists increased their technological and economic homogeneity and thereby linked the processes of international specialization to the growing concentration of specialized production in the individual countries.

The CEMA countries are accumulating a certain amount of experience with the consolidated solution of the problems of international specialization and cooperation also by implementing the program for the production of nuclear power plant equipment, the program for the development and production of electronic computers, etc.



## 2. Basic Prerequisites for the Formation of Long-Term Programs for Production Specialization and Cooperation Within CEMA

The long-term multilateral programs for international production specialization and cooperation are intended to effectively influence not only the final production results and the marketing of the specialized products, but also production activity itself. In other words, the effect will manifest itself not only in the sphere of commodity circulation, but also in production proper: in a higher degree of specialization within the individual countries, in the greater concentration and the optimization of the output of homogeneous products, and in the full utilization of highly productive technology at the internationally specialized enterprises. As the production and technical-economic effect of international specialization accumulates, the basis is formed for sustained and long-term efficiency in all links of economic activity that are included in the processes of integration.

The objective feasibility of elaborating programs for international production specialization and cooperation among the CEMA countries is based on the common nature of specialized production's technical and economic factors that unite various sectors. The grouping of sectors and manufactures into complexes on the basis of their similar factors overcomes the narrow sectoral and central-agency approach to international production specialization and cooperation, and it enables these processes to take place on a complex basis, by homogeneous groups of products listed in detail, regardless of how a group is divided among different central agencies or where territorially the products are produced. Thus the program does not disturb the existing organizational and sectoral structure of the engineering industry.

The intersectoral organization--i.e., specialization and cooperation within the limits of a diversified and consolidated list of products produced by a specified complex of sectors--increases not only the homogeneity of specialized production but also its availability for unification, and hence the interchangeability in design and production of final products intended for different uses. This principle makes it possible to develop modern systems of machines and production lines, relying on a single base for the introduction of new modular designs, particularly in radio engineering, electronics, and instrument building.

Conditions for the elaboration of programs are the most favorable in engineering, because the entire production process in this branch comprises a series of successive stages, and the aggregate final product--the machinery and equipment--consists of a few functional technological groups. A combination of the functional approach and of the stage-by-stage approach to engineering production when grouping the product lists and their corresponding sectors and types of manufacture provides the basis from which it is possible to determine the areas and directions of the programs for international specialization and cooperation. Additional criteria for including in the program's product list the products to be produced within a certain production complex are the volume, repetition, steadiness and series size of the homogeneous output.

Another fundamental condition for achieving the maximum possible concentration of homogeneous specialized production is that at least one of the three characteristics of design and technological homogeneity must be taken into account: the technological production operations and functions are performed by means of corresponding types of machinery and equipment; the design solutions in relation to the operating organs of the capital assets; the output's technical and other parameters, and the external appearance of the produced output.

Concerning the homogeneity of the technological production operations and functions performed by the corresponding types of machinery and equipment, this factor determines primarily the design characteristics of the products, and the technology of producing the final product and its complementary parts and sub-assemblies. Differentiation and unification of engineering's diverse product list according to the characteristic of functional homogeneity apply mostly to specialization of the production of technological equipment and machinery in the stage of their assembly.

In engineering the entire system of modern technical equipment can be subdivided into four to six basic functional groups. Essentially this division stems from the basic functions of labor that has been replaced by technical equipment under the influence of the advances in science and technology.<sup>4</sup> These groups include first of all the technological or executing (work) function that directly transforms the object of labor. This function is performed by the bulk of the technological equipment and operating machinery that process the physical objects of labor. Secondly, there are the drive or power function, and the transfer function (the latter includes materials handling, the feeding of the objects of labor, the switching of machinery, etc.) performed by technological equipment that transports and moves the objects and results of labor and generates energy. This is a complex of materials handling and hoisting equipment, intraplant equipment, hauling equipment, industrial robots, and power generating equipment. Thirdly there are the logic functions that can be subdivided into two groups differing in their degree of complexity: recording, measuring and regulation; and the more complex functions of goal-setting and control. In accordance with these functions it is possible to distinguish recording, measuring and testing instruments on the one hand (they provide the information necessary for more complex logic functions), and technical equipment for information processing on the other. This is a system of analog and programmed-control devices and electronic computers that control production processes and administrative work. Fourthly we can distinguish the group of so-called servomechanisms that provide communication and feedback between the listed groups of equipment. Fifthly, the technical equipment that serves the nonproductive sphere--health care, science, education, culture, sports, etc.--is included in a separate functional group.

Subdividing into appropriate groups all the sectors that make final products intended for production technology ensures efficient use of their scientific, technical, production and manpower potential employed purposefully for the realization of specific measures to intensify international production specialization and cooperation. Under these conditions also the forecasting of engineering's scientific-technological and technical-economic development becomes more accurate in each of the functional groups of machinery and equipment.

However, the organization of specialized production on the basis of the technological and functional purpose of the output does not fully utilize all its advantages, and it does not bring specialization outside the sectoral limits. The point is that, as a result of the influence of scientific and technological progress, the same production processes may be performed with machines that differ in their characteristics, principle of operation, and peculiarities of their production.

Ensuring the second characteristic of homogeneity in engineering further increases the similarity of the products intended for the same production technology, and it also determines their type, but it does not fully utilize all the

possibilities for increasing the concentration of homogeneous industries as a base for specialization and cooperation, because it does not guarantee complete homogeneity of the production of one type of output. Specifically for this reason it is necessary to ensure also the third characteristic of homogeneity, based on the output's technical and other parameters, its dimensions and external form, which essentially determine the product's model and its complete design and technological homogeneity, permitting the use of the most advanced production technologies and highly productive equipment.

When there are common criteria that combine different sectors into complexes by stages of production, each complex has its own specific characteristics that likewise must be taken into account in international production specialization and cooperation.

### 3. Intersectoral Production Complexes as the Bases of Long-Term Production Specialization and Cooperation in Engineering Among the CEMA Countries

The clear sequence of operations in the production process within engineering makes it possible to distinguish three of its stages, and the intersectoral complexes corresponding to these stages: initial processing, processing, and assembly sectors, plus two auxiliary sectors that provide services for production and users.<sup>5</sup> Each one differs in terms of the nature of the technological processes, the characteristics of homogeneity, and the intended use of the products and provided services.

Production complexes provide the most favorable conditions for the intensification of intrasectoral specialization, whereas cooperational relations develop at the junctions of the complexes. If any industry is separated from a complex because the industry has become specialized, this simultaneously presupposes that the industry will be linked to the other stages of production by means of cooperation.

When classifying the sectors, we include in the complex of initial processing the industries that produce intermediate products intended for general use in engineering.<sup>6</sup> The diversity of the technological processes in these industries (stamping, casting, pressing, rolling, cutting, welding, etc.) determines the differentiation of the lists of products to be produced, presupposing strict differentiation, classification and grouping of the products according to the characteristics of their design and technological homogeneity, with provisions for the possible introduction of specialized production technology and a high level of production concentration. On the sound structure of this complex depends to a large extent the effectiveness of entire engineering, because specifically here are the latent reserves for economization in the use of material resources.

The second complex, of processing industries, is the basic complex in engineering.<sup>7</sup> The unsolved key problem in these industries is to combine their product lists, expanded under the influence of the progress in science and technology, with maximum consideration of the interests of the entire engineering complex as a whole, especially of the assembly sectors.

In terms of its intended use and spheres of application, the output of the initial processing and processing industries is of an intersectoral and general



industrial nature. It is used in the assembly, auxiliary, service and other sectors of industry.<sup>8</sup> Specialization and cooperation have similar characteristics in both complexes, although in the initial processing complex they depend predominantly on the technological transformations and operations, on the starting material, on the size and weight of the prefabricated parts; and in the processing complex, on the type and characteristics of the parts, subassemblies and sets. The scale of production and the size of the series are determined by the volume and elasticity of the demand on the one hand, and by the standardization, unification and interchangeability of the parts and subassemblies on the other hand; and in the assembly stage, by the development of parametric series. Thus the products made by both complexes are of an intermediate nature and enter the interrelationship of production technology as production moves from starting materials and semifinished products, through the manufacture of complementary subassemblies and parts, to the final assembly operations.

The output of these industries enters the sphere of international trade in limited volumes, in the form of deliveries of spare parts, and it is barely covered by international specialization and cooperation agreements. Yet on the degree of these industries' specialization and cooperation in the CEMA countries depend to an increasing extent their rates of industrial growth, the effective introduction of new manufactures, the improvement of the produced products' quality and technical level, and the mobility of engineering production in general.

The third complex consists of assembly industries<sup>9</sup> in which the processes of producing engineering's final products take place. It includes not only assembly, but also the adjustment, centering and regulation of the finished products. At present assembly operations are concentrated basically at universal enterprises and involve additional expenditures of labor for the additional machining of the parts received from the cooperating sectors, although this machining should have been completed in the second stage. The universal nature of the enterprises is the dominant, and they have both initial processing and processing shops. Thus the basic problem in developing this complex is to centralize production at specialized assembly enterprises, and to develop expedient parametric series of the final engineering products. To the extent that the initial processing and processing stages of production are removed in the future into separate complexes specialized according to their technologies and produced parts, we can expect a noticeable increase in the international level of cooperational relations within engineering, and also of intersectoral cooperation within CEMA.

The fourth complex of sectors includes all types of activity that support the basic production processes, and it has objective prerequisites for a significant increase of its level of centralization. The role of these industries is rising steadily. On them depends to a considerable extent the effectiveness of the basic production process and the mobility of entire engineering under the conditions of the revolution in science and technology. They include: (1) toolmaking; (2) production of technological equipment; (3) repairs; (4) loading and unloading operations, and transportation (including in-plant materials handling); (5) the production of containers, packaging, packing materials, etc.

In terms of the intended use and the spheres of application of their output and services, also these industries are of an intersectoral nature. On the basis

of its type of specialization and the peculiarities of its development, this complex is close to the first two complexes of engineering sectors.

The fifth complex of sectors serves the users of engineering's output, outside the framework of engineering production. It includes also engineering consulting, the supply of technological documentation, services in construction, and the instruction and training of specialists (this task is especially pronounced in science-intensive industries that use N/C machine tools and automatic production lines). International cooperation to develop this group of sectors is still in its initial stage.

Solution of such an important task as the grouping of sectors for the purpose of specialization, and their subdivision on the basis of their characteristics of homogeneity, independently of whether they belong to this or that sector of engineering, provides a real possibility to develop a classification of parts for production specialization within engineering. After the grouping of the sectors, the next phase in the elaboration of a program for international production specialization and cooperation should be to train a parts classifier for the successive specialization of production within the selected complexes, and for the extensive use of computer technology in choosing the directions of specialization. The classifier can be developed as a part of the "General Classifier of Industry and Farm Production in the CEMA Countries," with due consideration for similar classifiers in the individual CEMA countries and for the "Classification of the Sectors of the National Economy in the CEMA Countries." The basis of classification should be the characteristics of the parts' design and technological homogeneity as outlined above, to ensure the homogeneity of the production processes according to the selected target product lists.

Thus, after the elaboration of the parts classifier for specialization, the most complex task of the entire program becomes the determination of the priority directions of specialization. The choice of such directions is limited on the one hand by the basic economic objectives of developing the engineering complex: the production of capital goods for the fuel and raw-material complex and agricultural-industrial complex, and for the sectors of the consumer goods industry and of high technology products that ensure economical use of raw materials and supplies. On the other hand, by the possibility of selecting from among the priority series of products only those that can enhance the organization in the CEMA countries of highly specialized industries producing a homogeneous output, in accordance with the chosen criteria of homogeneity. These limitations on choosing the directions of specialization are in agreement with the task of supplying the CEMA countries with new technology and technology that is in short supply, on the basis of intensifying the international division of labor. At the same time the CEMA countries have greater freedom in choosing the system of machines and the series of products for specialization, and--within the mentioned limitations--also the types, models and sizes.

The basic method of selecting economically effective directions of specialization for the CEMA countries could become the method of comparative advantages that has been tested by the temporary work group for automatic couplers within the CEMA Permanent Commission for Engineering, and in the Interkhim International Organization for Cooperation in the Chemical Industry. The formation of complexes of sectors on the basis of uniform criteria of homogeneity expands the sphere of

application for the method of comparative advantages. In accordance with the uncovered directions of production specialization, it is possible to elaborate a system of corresponding measures by periods and stages, with provisions for utilizing the given country's own or pooled resources and scientific-technical potential, and to attract third-country partners when this is unavoidable.

#### FOOTNOTES

1. So far as the institution of conferences of the CEMA countries' plenipotentiaries is concerned, its task includes supervision of the fulfillment of agreements. But on the one hand it is linked fairly loosely to the coordinating activity of the CEMA Secretariat's organs. On the other, this institution is so diverse and internally uncoordinated in certain areas that it creates a cumbersome system for managing the processes of the division of labor in production.
2. In a somewhat different sense, but starting out from the same dialectic principle of qualitative changes in economic phenomena as they mature, Yu. Kormnov and Ye. Karlik call attention to the fact that "the concentration of specialized production has limits of economic effectiveness beyond which it cannot increase." (PLANOVoye KHOZYAYSTVO, No 8, 1980, p 83)
3. The expediency of differentiating functional and ultimate objectives when using the target-program methods in planning and management is explained in detail in the proceedings of the All-Union Conference on the Target-Program Methods of Planning and Management, in the Light of the Resolutions Adopted by the 25th CPSU Congress. This conference was held in November of 1977.
4. The classification of the functions of labor and their relationship to the functions of technical equipment in production processes are analyzed in detail in the works of G. Volkov, S. Tovmasyan, S. Kheyman, I. Mayzel' and a number of other authors who have investigated various aspects of scientific and technological progress.
5. Such a grouping is based on the principle of the economic multiplier effect, elaborated by Bulgarian economists for large-scale industrial complexes. Analysis of the multiplier effect is a classical area of economic investigation that up to now has been confined to the macroeconomic level that does not affect individual industries.
6. The complex includes the following industries: (1) founding; (2) die forging; (3) the forming of bent shapes and rolling; (4) production of welded metal structures (and nonmetal structures for the construction industry); (5) cut parts; (6) forgings; (7) gears; (8) axles, cylinders, splines, sprockets, etc.; (9) bushings, flanges, pulleys, etc.; housings for bearings; (10) fasteners; (11) springs, shock absorbers, brake system components; (12) electronic and electrical engineering components; (13) cermet products; (14) electrical materials; (15) cables, conductors, etc.; (16) products made of plastics.



7. The second complex includes the production of the following: (1) hydraulic drives and hydraulic control elements; (2) pneumatic drives and pneumatic control elements; (3) lubricating apparatus and filtering devices; (4) reduction gears and speed regulators; (5) transmissions and drive shafts; (6) internal combustion engines; (7) electric motors; (8) electrical apparatus complementing finished products; (9) electronic apparatus complementing finished products; (10) measuring and other instruments for complementing finished products; (11) industrial and medical equipment; (12) control mechanisms; (13) transmissions and rear axles of transportation equipment; (14) brake systems; (15) storage batteries, dry cell batteries, etc.
8. In particular, on the effectiveness of the initial processing industries' operation depend the economical use of raw materials and supplies, the reduction of labor intensity in the processing and assembly industries, and the reduction of the unit cost of engineering output. The proportion of material costs in engineering is about 45 percent in metallurgy, and around 65 percent in electrical engineering. Within entire engineering, metal working requires 55 percent of the finished metal output (rolled stock, sectional steel, steel castings, etc.). The introduction of scientific and technological advances on the basis of the intensification of specialization and cooperation is one of the conditions for higher effectiveness in these industries [4].
9. The assembly sectors ensure the output of production technology equipment essentially for all branches of the national economy. They include the following industries and types of production: (1) equipment for the food and light industry; (2) equipment for trade and public catering; (3) agricultural machine building and tractor production; (4) machine building for public utilities; (5) production of home equipment and plumbing fixtures; (6) medical machine building; (7) equipment for the printing industry; (8) equipment for the production of cultural goods (radios, motion picture equipment, photographic equipment, and television equipment); (9) equipment for environmental protection; (10) power-generating equipment; (11) equipment for the petroleum, natural gas, and petroleum processing industries; (12) electrical machine building; (13) machine building for the coal-, shale- and turf-mining industries; (14) mining and drilling equipment; (15) equipment for geological exploration; (16) equipment for metallurgy; (17) chemical industry equipment; (18) equipment for the lumber, pulp and paper industry; (19) equipment for the wood-chemical industry; (20) equipment for the chemical industry; (21) construction and road-building equipment; (22) equipment for the building materials industry; (23) transport machine building; (24) production of equipment for communication systems; (25) production of technical means of control (electronic computers, automatic control systems, office mechanization, etc.).

#### BIBLIOGRAPHY

1. Chukanov, O., PLANOVYE KHOZYAYSTVO, No 8, 1980.
2. EKONOMICHESKAYA GAZETA, No 37, 1980.
3. Kormnov, Yu., and Karlik, E., PLANOVYE KHOZYAYSTVO, No 8, 1980, p 83.
4. Trifonov, B., in "Puti povysheniya proizvoditel'nosti truda" (Ways of Increasing Labor Productivity), Moscow, 1976.

COPYRIGHT: Izdatel'stvo "Nauka", "Izvestiya AN SSSR, seriya ekonomicheskaya", 1982

## USSR-CEMA TRADE

### PROBLEM OF REDUCING AMOUNT OF METAL USED IN MANUFACTURING, CEMA COOPERATION

Moscow IZVESTIYA AKADEMII NAUK SSSR: SERIYA EKONOMICHESKAYA in Russian No 4, Jul-Aug 82 pp 116-125

[Article by A. I. Zubkov]

[Text] The article investigates the trends in the production and use of ferrous metals in the CEMA countries in the 1970's and 1980's. Ways of reducing the metal intensity of national income are analyzed, and the role of ferrous metals is explained in the consumption structure of structural materials. Special attention is devoted to generalizing the experience of cooperation among the countries of the socialist commonwealth, and to the use of such cooperation in solving the new problems in this field.

Raising the effectiveness of production in every possible way and changing to intensive growth are important characteristics of the present stage of economic development in the countries of the socialist commonwealth. In this context the CEMA countries are attributing ever greater importance to reducing the energy- and material-intensity of production, to the economical and sensible use of raw materials, metals, fuel, energy and other material resources.

The changeover to intensive economic development places qualitatively new requirements on the basic branches of industry that are the foundation of the entire economy's dynamic growth. Most countries of the socialist commonwealth now have a developed complex of such industries, prominent among which is ferrous metallurgy. Steelmaking in the CEMA countries increased from 156 million tons in 1970 to 210 million in 1980, and their share of the world steel output in 1980 was 29.5 percent [4].

Ferrous metallurgy has developed at a fast rate not only in the Soviet Union, but in the other European CEMA countries as well. Cooperation with the Soviet Union and their mutual economic relations enabled them to overcome their limited national fuel and raw-material resources and the narrowness of their domestic markets for metal and metallurgical equipment, and to develop large-scale metallurgical production. As a result, the per capita production of steel in the European CEMA countries (without the Soviet Union) increased from 386 kg in 1970 to 562 kg in 1980; and the per capita consumption of steel increased from 402 to 530 kg. In this group of socialist countries, the output of steel exceeded its consumption by the end of the 1970's. Another important result

of the successful development of ferrous metallurgy in the European CEMA countries is the fact that in terms of the weighted average steel consumption their ferrous metallurgy has already surpassed significantly the leading EEC countries, namely France, the Federal Republic of Germany, Italy and the United Kingdom, where this indicator averaged 411 kg in 1980. Individual European CEMA countries exceeded this average level of the Western European countries 1.3 to 1.8 times (for example, the GDR, Romania and Czechoslovakia), while others (Bulgaria and Hungary) were about 20-25 percent behind. But in terms of this indicator even these two European CEMA countries exceeded the United Kingdom and nearly overtook France [5].

Under these conditions, the problem of the predominantly quantitative growth of the production and consumption of ferrous metals is on the whole less acute for most CEMA countries. The factor of the maximally effective use of metals assumes the primary role. However, shortages still persist or newly arise in some types of metal production. These shortages are solved by expanding domestic production, and also through trade between CEMA countries and importation from third countries, including capitalist countries. In general such shortages are caused by failure to adequately perfect the production structure of ferrous metallurgy, by the relatively low effectiveness of the use of ferrous metals in the supplied branches, and by incomplete utilization of the possibilities inherent in international specialization and cooperation in metal production within CEMA. As a result, a number of CEMA countries are exporting to the markets of capitalist countries a larger tonnage of rolled steel than what they import. But the import prices are significantly higher than the export prices.

In most CEMA countries the further traditional quantitative growth of the output and consumption of metallurgical products, at the same rates as during the past decade, is becoming difficult and not very effective, for a number of reasons.

First of all, in the Soviet Union, which is the principal exporter of metals and metallurgical raw materials to the other CEMA countries, production increasingly uses resources lying at greater depth, characterized by a low ore content, located in remote regions, etc. These expensive resources are being used increasingly to compensate for the dropout of capacities and to maintain the production volumes achieved earlier, and also to further increase the output of raw materials. In the mining and metallurgical industry of the Soviet Union, the proportion of investments for maintaining the volumes achieved in the mining of the raw material is rising constantly. At the same time, compensation for the dropout of capacities requires rising specific capital investments because the new projects of the mining industry must be built in underdeveloped regions and under more adverse natural conditions. These circumstances, and also the fact that minerals are nonrenewable resources, compel a comprehensive assessment of the possible scale of their use, and also consideration of the limits for increasing the mining and deliveries of the raw materials.

Secondly, in the CEMA countries that import raw materials, the possibilities for increasing their consumption are becoming limited. These limitations arose as a result of the rising foreign-market prices of metallurgical fuel and raw materials, of their balance-of-trade and balance-of-payments difficulties, difficulties in expanding the output of export products most in demand to pay for the imports, etc. For objective reasons, the countries that import fuel and raw materials can no longer increase their consumption at the previous rates.

Thirdly, in the countries that export fuel and raw materials as well as in the ones that import them, scientific and technological progress now makes further economic growth possible with significantly smaller inputs of energy and raw materials. The costs associated with the rationalization of the consumption of raw materials and supplies, and with ensuring economic growth in a less material-intensive manner, usually are lower than the costs of a large-scale expansion of the production and consumption of raw materials and supplies.

Economical and rational use of material resources is the basic direction of the further comprehensive and fullest possible supply of the CEMA countries needs in the production of metals. The great potential possibilities for increasing the effectiveness of metal consumption are evident, in particular, from the approximate computations of national income's metal intensity in the countries of the socialist commonwealth and in the capitalist countries.

In the European CEMA countries jointly (without the Soviet Union), steel consumption per unit of national income at the end of the 1970's was about 1.5 to 1.6 times higher than the average for the largest Western European countries and the United States. The metal intensity of national income is especially high in Czechoslovakia, Poland, Romania and the German Democratic Republic. In Hungary and Bulgaria national income's specific metal intensity was the same or lower than the level in a number of developed capitalist countries. The considerable expenditures of metal in the economies of most European CEMA countries led in their turn to its large-scale production. Thus in Czechoslovakia in 1980 steel production per unit of national income was nearly 2.5 times higher than in a number of Western European countries, and about 2.9 to 3.0 times higher than in the United States. This was caused partially by Czechoslovak metallurgy's specialization for export, and to a considerable extent by the high metal intensity of entire domestic production. In Poland and Romania the steel output per unit of national income was likewise considerably higher than in the countries of Western Europe.

In the 1970's, the rise of the effectiveness of production in the countries of the socialist commonwealth ensured a reduction of the metal intensity of national income. In 1980, for example, the inputs of steel per unit of national income dropped by 21 percent in comparison with 1970 in the European group of CEMA countries, but the considerable gap in terms of this indicator between a number of CEMA countries and the countries of Western Europe still persists. Moreover, in practically every European CEMA country the steel output per unit of national income dropped more slowly than its corresponding consumption. This in its turn indicates that in the 1970's there was a tendency in these countries to supply the demand for metal more fully by developing its domestic production, at very limited national possibilities for obtaining metallurgical raw materials, and in many instances also fuel.

The communist and worker party congresses in the CEMA countries in 1979-1981 directed their national economies to further reduce the metal intensity of production in 1981-1985 and in the more distant future. The measures in this area include structural changes in the metal-using sectors, the technical re-equipment of a number of sectors and the introduction in them of material-saving low-waste or no-waste technologies, the elimination of the unproductive and wasteful use of metal in the national economy, etc.



Table 1. Production and Consumption of Steel per Unit of National Income in the European CEMA Countries (Without the Soviet Union) in 1980\*

Country	Steel production per unit of national income			Steel consumption per unit of national income		
	1980/1970 (percent)	EEC = 100**	USA = 100	1980/1970 (percent)	EEC = 100**	USA = 100
Bulgaria	73	80-85	100-105	61	100-105	95-100
Hungary	75	90-95	110-115	70	95-100	90-95
German Democratic Republic	91	95-100	115-120	67	140-145	135-140
Poland	97	170-175	210-215	94	185-190	180-185
Romania	84	150-155	190-195	78	155-160	150-155
Czechoslovakia	85	240-245	290-295	80	195-200	190-195
Average for European CEMA countries	87	150-155	180-185	79	155-160	150-155

\*Production and consumption of steel based on tonnage. National income estimated in rubles, according to the methods adopted in the Soviet Union.

\*\*Federal Republic of Germany, United Kingdom, France and Italy jointly. Sources: "Statisticheskiy yezhegodnik stran-chlenov SEV" (Statistical Yearbook of the CEMA Countries), Moscow, Statistika, 1981, p. 83; "Rynok produktov chernoy metallurgii v 1975 godu" (The Market for Products of Ferrous Metallurgy in 1975), United Nations, New York, 1976, Supplement, Table 2; "Rynok produktov chernoy metallurgii v 1980 godu" (The Market for Products of Ferrous Metallurgy in 1980), United Nations, New York, 1981, Supplement, Table 2; the 1970 and 1980 statistical yearbooks of the individual socialist countries.

Realization of this extensive set of outlined measures is to ensure large-scale economies in the use of ferrous metals and other materials. East Germany, for example, plans to achieve in 1981-1985 an average annual reduction of 6.3 to 6.5 percent in the consumption of rolled steel in the metalworking industry, and 3.9 to 4 percent in construction. In the GDR economy the amount of rolled steel saved should reach about 2.0 million tons by 1985 [10, pp 18, 25, 68]. In Romania the standard consumption of metal in engineering is to be reduced by at least 20 to 23 percent during the current five-year plan, and the entire national economy has been assigned the task of saving about 5.0 million tons [6, p 75]. In Czechoslovakia the minimal average annual reduction of the consumption of metal in production in 1981-1985 should be 4.5 to 5 percent, and the total amount of ferrous metals saved during the five-year period should be about 2.0 million tons [2]. The other European CEMA countries likewise have set high targets for increasing the effectiveness of the use of metal under the current five-year plans.

Economical use of material resources is becoming one of the more important factors of the Soviet Union's economic growth. In 1985 in comparison with 1980, the Soviet Union plans to ensure an average reduction of 18 to 20 percent in the consumption norms for rolled ferrous metals in engineering and metalworking, and 10 to 12 percent for steel tubes; in construction the savings of rolled ferrous metals should be 7 to 9 percent [1].

Thus, important areas for the economical use of metal will be the principal metal-using branches: engineering and construction; their share is between one-half to two-thirds of the total consumption in the national economy. Here there are immense latent reserves for effectively reducing the consumption of metal. In the Soviet Union, for example, a reduction by one-half of the losses and wastes in metalworking would be equivalent to a 10-percent increase in the output of rolled ferrous metals. No less significant possibilities for saving metal exist also in the engineering industries of the other socialist countries.

The coefficient of the use of rolled ferrous metals in engineering, determined as the ratio of the weight of the machinery and equipment parts and subassemblies made of metal, to the weight of the metal received for machining, did not exceed 0.72 to 0.75 in most CEMA countries, including the Soviet Union, during the second half of the 1970's. In the United States and the Common Market countries during the same period, this coefficient was 0.83 to 0.85. Only in the GDR was this coefficient slightly lower, and in Hungary it was at the same level as in a number of developed capitalist countries [1]. A comparison of these data shows that in the engineering industries of the countries belonging to the socialist commonwealth a huge amount of metal, measured in many million tons a year, is turned into chips and irrevocably lost. In engineering the machining of the additional volume of metal necessitates the operation of an extremely large stock of metal-cutting machines, and this results in the unnecessary expenditure of energy and live labor.

Enormous possibilities exist in the engineering industry itself for the more efficient use of metal. World practice proves that about 45 percent of the savings of steel in this industry is achieved through measures introduced in engineering itself. These measures include the introduction of the latest metalworking technology (die-forging, pressing, welding, etc.), improvement of the designs of the produced machinery and equipment, the use of specialization,

cooperation and the concentration of production that permit the application of the most advanced machinery, technology and production organization, etc. [7].

Management experience in the CEMA countries confirms that the effective development of engineering, including the efficient use of metal, can be ensured the most fully when these countries mutually cooperate in this sector. Intensification of scientific and technical cooperation in all its various forms enables the CEMA countries, for example, to combine their efforts and develop jointly new models of better machinery and equipment that have a lower metal intensity, which cannot always be achieved within a short time by using only national resources for this purpose. At the same time there are considerable possibilities in engineering for international production specialization and cooperation, by topics as well as by subassemblies (or parts), with due consideration for supplying the metal needs of the sector and intensifying the division of labor in the production of machinery and equipment.

The CEMA countries are planning further structural changes in their economies, including their engineering industries. Here the preferential development is planned of the electrical machinery industry, electronics, robotics, and of other sectors and subsectors that are distinguished by low metal intensity and material intensity. Naturally, the trend toward the accelerated growth of the relatively nonmetal-intensive industries does not eliminate the necessity of supplying the CEMA countries' demand for engineering products that are more metal intensive (transport equipment, mining equipment, farm machinery, etc.). Therefore the limited growth of some of these industries in certain countries must be accompanied by a corresponding growth of these industries in the other CEMA countries. This fact objectively enhances the significance of multilateral long-term target programs for cooperation in engineering, of the bilateral specialization and cooperation programs, and of coordinating the national economic plans to mutually reconcile the structural changes in the economy.

Although engineering has considerable intrasectoral possibilities for economies in the use of metal, the comprehensive, rational and most efficient use of metal cannot be achieved solely through this factor. Up to 55 percent of the savings of ferrous metal in engineering is ensured through measures in other sectors: by preferentially increasing the output and deliveries of high-grade metal to engineering, by expanding the entire range of the economical types, grades and standard sizes of rolled stock supplied by metallurgy, by introducing substitutes for steel (plastics, light nonferrous metals, etc.).

Starting out from these requirements, the present production structure of ferrous metals in the CEMA countries cannot be left unchanged. Thus in some CEMA countries the proportion of oxygen steelmaking within the total output is about one-fourth to one-third lower than in the developed capitalist countries. In all the European CEMA countries jointly, the proportion of electric furnace steel in 1980 was 17 percent, as compared with 27 percent in the countries of Western Europe [3]. The structure of the assortment of rolled steel must also be improved further. For example, the proportion of sheet steel within the total output of rolled steel is still too low. At the same time the proportion of plate within the output of rolled steel is excessively high, while the proportion of sheet is relatively low, although sheet is more economical for many

metalworking applications. And within the total volume of sheet, the output of the highest grades--cold-rolled sheet, and sheet coated with polymers, aluminum or other materials--has not yet reached the proportion that is economically warranted. In some CEMA countries the assortment of rolled stock is too narrow and does not include a number of modern and economical sections essential to the national economy.

The development of many metal-using sectors in practically every CEMA country leads to an expansion of their demand for rolled stock in a wide and varied assortment. If under these conditions the tendency of supplying domestic demand primarily from domestic production were to continue, this would lead to the construction of a large number of unproductive rolling mills, and in the final outcome to the creation of capacities that are not the optimal. Simultaneously this is fraught with the inefficient use of the rolling mills due to their frequent readjustment when changing from one type of rolled stock to another.

International specialization in ferrous metallurgy permits the concentration of production capacities, which reduces production costs and raises the productivity of labor. The advantages of international specialization make it expedient to locate in most CEMA countries only a part of the types of metal production each of them needs. Here it is necessary to take into consideration not only the domestic demand for the given output, but also the demand of the other interested socialist countries. In this way each country participating in international specialization of the production of rolled stock has wide opportunities to expand its markets, to concentrate production and to raise the economic effectiveness of metal production.

International specialization in the production of rolled stock among the CEMA countries could be based on a joint or reconciled plan for the development and location of ferrous metallurgy, taking into account the long-term demand for rolled stock, the concentration of the production of the basic types of the assortment and standard sizes of rolled stock by countries, and their exchange in a way that ensures balanced mutual trade relations. This plan could reflect also the coordinated measures for retooling ferrous metallurgy, for the elaboration and introduction of new technology, and for developing progressive manufactures.

In the 1980's the CEMA countries are planning to improve their assortment of rolled stock, including increases in the output of sheet steel, light-weight sections, sheet with a protective coating, transformer steel, etc. Coordination of the process on the basis of the reconciled plan for the development and location of ferrous metallurgy will significantly accelerate and make easier the solution of the problem of further progressive changes in the structure of metallurgy in the CEMA countries.

A reduction of the national product's metal intensity is being ensured by improving the quality of the metal produced and used. As evident from the orientations in the CEMA countries for the current five-year plans and thereafter, this direction is the dominant in the development of metallurgy. The GDR, for example, plans to increase its output of rolled stock with a high degree of finish from 4.33 million tons in 1980 to 7.385 million in 1985; and the proportion of this output within metallurgy's final product, to 80 percent.



In conjunction with the timely problem of improving metal quality, an important direction of the CEMA countries' cooperation could become the coordinated use of the new technology of direct reduced iron. This method excludes the blast furnace from the metallurgical cycle, and consequently also the consumption of coke and coking coal. In the future it could introduce certain changes in the direction of the international socialist division of labor among the CEMA countries in ferrous metallurgy.

The production of ferrous metals that bypasses the blast furnace is gaining ground in world metallurgy. The limited world resources of coking coal and its rising price are one of the basic reasons for the development of this direction in metallurgy. Another reason concerns the difficulties of producing high-quality steel from scrap with the conventional technologies. The substitution of direct reduced iron for scrap can best solve the problem of obtaining steel of high and guaranteed purity. The scrap saved in this manner can be used to produce ordinary metal and metal of higher quality. The new technology is characterized by increased effectiveness. According to the data supplied by some foreign firms, the construction of a metallurgical plant with equipment for the direct reduction of iron requires 25 percent less capital outlay than a conventional plant of the same capacity [12].

Soviet science has made considerable progress in the investigation of the processes of direct reduction, and the practical introduction of the new technology has already begun. Thus steel will be produced from direct reduced iron at the Oskol Electrometallurgical Plant now under construction (Kursk magnetic anomaly). In the course of developing this direction in Soviet metallurgy, several possible variants have emerged for the international socialist division of labor within the metallurgical complex: First, in collaboration with the interested CEMA countries, long term the production could be introduced of the intermediate (metallized pellets) in the Soviet Union, and the interested CEMA countries would be supplied from there. Secondly, in cooperation with the CEMA countries, a metallurgical plant could be built in the Soviet Union that would incorporate the entire cycle of the new "direct reduction/electric arc furnace" technology, which would be in accord with the position of the Complex Program of Socialist Economic Integration regarding the joint construction by the CEMA countries of metallurgical plants in the Soviet Union (in this case the CEMA countries would be supplied electric steel). Thirdly, the possibility of combining the first two variants is not excluded in the process of intensifying the international socialist division of labor in the field of metallurgy.

It is expedient to build such a plant in stages, with a capacity of 1.0-1.5 to 2.0-2.5 million tons of steel/year/stage, which will eventually bring the total capacity to between 10 and 12 million tons/year. Here it will be necessary to investigate the degree of the effectiveness of the various forms of collaboration, including the form of organizing a joint firm. Collaboration in establishing and operating such a large enterprise can contribute significantly toward ensuring the supply of the CEMA countries' growing demand for high-grade steel.

The European CEMA countries have been and will remain large importers of sources of energy. Moreover, the development of technological progress will increase also in the future the demand for energy-intensive metallurgical products, including electric steel. These countries are planning to expand their production of electric steel also in the future, although their shortage of

energy resources sets objective limits for such growth. Collaboration in building a metallurgical plant employing the new technology that combines direct reduction of iron and electric arc steelmaking can eliminate to a considerable extent the obstacles to ensuring the supply of the CEMA countries' growing demand for high-grade steel.

The already accumulated experience with collaboration by the countries of the socialist commonwealth, and the further development of their collaboration make it possible to solve also by other progressive methods the problem of the growing production and consumption of high-grade steel. Thus, joint studies by the Soviet Union and the GDR have led to the realization of the idea of building unique plasma furnaces in which alloy steels can be made at a minimal loss of the expensive alloying elements and at substantial savings of electricity. The two such furnaces built in the GDR, with a capacity of 10 and 30 tons respectively, belong among the highest world-level technical achievements in this field [8]. This experience with the joint solution of complex technological problems can be utilized on a larger scale in metallurgy and in other sectors as well.

A new direction in collaboration could be the development of the production of metal powders that is planned in the Soviet Union, the GDR, Bulgaria and some other CEMA countries. By compressing metal powders it is possible to produce, practically waste-free, intricate machinery and equipment parts, without their subsequent machining (cutting, turning, grinding, etc.). The national economic effectiveness of producing parts in this manner is substantially higher than by conventional methods. In the CEMA countries the present level of the production of metal powders is inadequate, and in some CEMA countries there is no such production at all. In this context it appears expedient to undertake a set of investigations, and planning and design work, to organize the output of the necessary equipment, and to establish powder metallurgy enterprises and shops of optimal capacity. All this requires coordinated decisions by the CEMA countries, and development of a corresponding progressive technology, with due consideration for utilizing the possibilities of the international socialist division of labor.

The faster production of high-grade metal and the related progressive structural changes in ferrous metallurgy will ensure economic growth at significant shifts in the ratio of two factors: the increase of metal consumption, and the decrease of the metal intensity of production. On average for the European CEMA countries without the Soviet Union, according to our computations, about 60 percent of the average increase of national income in 1971-1980 was ensured by an increase in metal consumption; and about 40 percent, by a reduction of national income's metal intensity. In the 1980's, according to the programs of economic development, about 50 percent of the increase in national income in this group of countries can be ensured by an increase in metal consumption; and 50 percent, by reducing national income's metal intensity. According to the available forecasts, in the developed capitalist countries (United States, Japan, the EEC countries) the increase of gross national product in the 1980's will be accompanied in a ratio of 47-53 percent by an increase in steel consumption, and approximately in the same ratio by a decrease of gross national product's metal intensity [13].

The factor of decreasing the metal intensity of production is gaining in significance over the factor of increasing metal consumption in ensuring the rates of economic growth. The growth rates of metal consumption will be significantly

lower in the 1980's than in the 1970's, due to the more efficient use of metal and also to the changes in the growth rates of national income.

In 1981-1985, the average annual growth rates of national income in the European CEMA countries can be expected to be about 4 percent [9]. If for this group of countries we assume an average annual growth rate of 4 percent also through 1990, then the corresponding average annual growth rate of steel consumption should be 2 percent, as compared with 3.4 percent in 1971-1980. As a result, total steel consumption in these countries in 1990 could increase approximately to 73-75 million tons, over 59 million tons in 1979. On the basis of the planned indicators of economic growth for 1981-1985, it may be assumed that metal consumption will increase at faster rates in Bulgarian and Romania, and metal intensity will decrease at faster rates in the GDR and Czechoslovakia, than in the other European CEMA countries.

In these CEMA countries the growth rates of steel production in the 1980's could be higher than the growth rates of metal consumption, if the trend of the 1970's to export metal to the markets of the capitalist countries continues. However, the limited national fuel and raw-material resources, the narrowing possibilities of importing them, and the need to make trade with the capitalist countries in metal products more effective will obviously change this trend. High-grade metal will assume an ever greater role in metal export to capitalist countries, and its total volume (in terms of tonnage) will remain at about the same level, but more probably it will decrease somewhat. But at the same time, this could increase metal export in terms of value. As a result, in the European CEMA countries steel production on the whole could grow commensurately with its consumption. At the same time, the mutual exchange of metal products among the CEMA countries will expand.

In the development of ferrous metallurgy in the European CEMA countries in the 1980's there will be a noticeable switch to the more intensive utilization of their own resources of metallurgical raw materials. In Czechoslovakia, for example, the task has been set of accelerating the recycling of the country's metal stock, and of improving the use of scrap in metallurgy. Wide possibilities for this do exist, because the metal stock's turnover rate in Czechoslovakia is about 25 years, as compared with 15 years in other developed countries [2, p. 132]. The use of domestic raw material in metallurgy, especially of scrap metal, is becoming one of the principal directions of solving the raw-material problem in the GDR [14]. In Romania only 42 percent of the available scrap metal is utilized, while in a number of industrially developed countries this proportion is 52-53 percent. In conjunction with this there are plans to significantly improve the use of secondary raw materials, and in 1985 this will cover 40 percent of the demand for iron [6, page 30]. Increased importance is being attributed to the use of domestic resources, particularly of scrap metal, in Bulgaria, Romania and the other CEMA countries. Ferrous metallurgy in the European CEMA countries will be supplied iron ore also through continued deliveries from the Soviet Union, and partially through import from third countries.

The long-term qualitative changes that are becoming evident in supplying the CEMA countries' demand for ferrous metals are only one aspect of the problem of ensuring their supply of structural materials. Ferrous metals, and steel and rolled steel in particular, will long retain their leading role in the total structure of the consumption of structural materials, although their share within this structure will systematically become lower under the influence of the progress in science and technology.



In the national economies of the European CEMA countries the structure of the consumption of structural materials, including metals, plastics and certain other structural materials, did not improve fast enough during the past decade. In the early 1970's, for example, in the European CEMA countries without the Soviet Union the proportion of rolled ferrous metals and pipes within the total tonnage of the basic structural materials used was 91-92 percent according to our approximate calculations. By the end of the 1970's, a number of European CEMA countries were able to improve their consumption structure of basic materials, by switching to the wider use of polymers, high-grade metal, pipes, etc. As a result, the proportion of rolled ferrous metals and pipes within the total consumption of materials dropped to 87-88 percent. During the same period, the proportion of ferrous metals in the consumption of structural materials was 80-82 percent in the EEC countries and the United States.

For the countries of the socialist commonwealth it is not expedient to copy exactly the consumption structure of basic materials that developed in the economies of the capitalist countries. The international socialist division of labor, and production specialization and cooperation in manufacturing lead to the formation of each CEMA country's own consumption structure of basic materials. However, the basic trends in the given field, dictated by the faster growth of newer industries (electronics, electrical engineering, etc.), should be taken into account to a much greater extent than this has been done up to now. The point is to change the consumption structure more purposefully, through the plan-conforming reduction of the share of ferrous metals and an increase of the proportion of such progressive materials as plastics, synthetic resins, aluminum, etc.

Starting out from the evolved world indicators of the consumption of chemicals, and from the trends of scientific and technological progress in this field, the use of plastics in the individual CEMA countries should be increased severalfold in comparison with the present level of their consumption. However, the problem of expanding the production of chemicals is directly linked to the fuel and power problem. Having solved the problem of the more intensive refining of petroleum, and having significantly increased the yield of light fractions as feedstock for the petrochemical industry, the CEMA countries can successfully expand the production of chemical materials, constantly increasing their role as a substitute for ferrous metals. Collaboration by the CEMA countries is a fundamental condition for developing the production and use of chemical materials: this includes cooperation in the supply of feedstock, specialization and cooperation in the production of machinery and equipment for the chemical industry, the exchange of chemical intermediates, agreement on the location of less and more energy-intensive chemical processes, the ensuring of transportation services, scientific and technological cooperation, etc.

The consumption structure of basic structural materials can be improved also by increasing within it the proportion of a number of nonferrous metals and rare-earth metals and also trace elements. The solution of this task is linked to the more complete and more effective utilization of their resources in the CEMA countries, to the elimination of the losses in their extraction, processing and application, and to the intensification of international socialist collaboration in these fields. In particular, on the basis of introducing the latest technology it is possible to reduce the losses in the beneficiation and smelting of nonferrous ores, to expand the utilization of beneficiation and smelting wastes



and secondary raw materials, etc. The exchange of experience with the utilization of wastes and available technologies, the joint and coordinated development of new technological processes, and a number of other directions in collaboration are able to increase the proportion of nonferrous and rare-earth metals in the consumption structure of materials in the CEMA countries.

The experience of Soviet-Hungarian and Soviet-Polish collaboration in developing the aluminum industry can be used long term to further improve the supply of a number of CEMA countries' demand for aluminum. For this purpose it would be necessary to study, for example, the possibilities of collaboration in utilizing the resources, which are in short supply, for the production of alumina; of coordinating the importation of bauxite and alumina from third countries; and of continuing to mine the domestic bauxite resources on the basis of mutual cooperation. It will be expedient also in the future to concentrate the highly energy-intensive production of aluminum close to large and efficient sources of fuel and power, by pooling the efforts of the countries belonging to the socialist commonwealth.

Technological progress is thus compelling further structural changes in the use of structural materials in the CEMA countries. In the process of these structural changes the share of ferrous metals will decline, and the share of plastics, light nonferrous metals and other progressive materials will increase. Large-scale changes are expected also in the production and consumption structures of ferrous metals themselves. All this will ensure the further growth of the effectiveness of socialist production as it continues to reduce its metal intensity and to improve the quality of its output. Expansion and intensification of mutual cooperation among the CEMA countries provide a solid foundation for the realization of these directions of technological progress.

#### BIBLIOGRAPHY

1. "Materialy XXVI s"vezda KPSS" (Proceedings of the 26th CPSU Congress), Moscow, Politizdat, 1981, p 142.
2. "XVI s"yezd Kommunisticheskoy partii Chekhoslovakii" (The 16th Congress of the Czechoslovak Communist Party), Prague, Orbis, 1981, p 132.
3. "Yezhegodnyy byulleten' yevropeyskoy statistiki chernoy metallurgii" (Annual Bulletin of European Statistics on Ferrous Metallurgy), Vol 8, United Nations, 1981, Table 1.
4. EKONOMICHESKAYA GAZETA, No 51, 1981, p 22.
5. "Rynek produktov chernoy metalurgii v 1980 godu" (The Market for Products of Ferrous Metallurgy in 1980), United Nations, New York, 1981, Supplement, Table 2.
6. RUMYNIYA. DOKUMENTY-SOBYTIYA, No 34, 1979.
7. BIKI [Bulletin of Foreign Commercial Information], Supplement 7, 1981, p 72.
8. PLANOVoye KHOZYAYSTVO, No 10, 1981, pp 111-112.

9. VOPROSY EKONOMIKI, No 10, 1981, p 97.
10. "Direktivy X s"yezda SEPG po pyatiletnemu planu razvitiya narodnogo khoz-yaystva GDR na 1981-1985 gody" (Directives of the 10th Socialist Unity Party of Germany Congress Regarding the Five-Year Plan for the Development of the GDR Economy in 1981-1985), Verlag Zeit im Bild, Dresden, 1981.
11. WIRTSCHAFTS WISSENSCHAFT, No 7, 1978, p 807; FIGYELO, No 23, 1976, pp 1-2.
12. ANNALES DES MINES, Vol 185, No 6, 1979.
13. "Price Prospects for Major Primary Commodities," MBRR, 1978, p 216.
14. NEUES DEUTSCHLAND, 15 April 1981.

COPYRIGHT: Izdatel'stvo "Nauka", "Izvestiya AN SSSR, seriya ekonomicheskaya", 1982

1014  
CSO: 1825/93

IMPORTANCE OF TRANSFER RUBLE UNDERLINED

Alma-Ata AGITATOR KAZAKHSTANA in Russian No 14, Jul 82, p 32

[Article by S. Baigarov: "The Transfer Ruble"]

[Text] Almost every large bank has a collection of money: dollars, pounds, krona and so forth. But not a single one of them can boast of the transfer ruble. The fact is that it does not exist in the form of a coin or bank or treasury notes. Yet this international socialist collective currency of the CEMA countries plays a more and more important role in each in their exchange and financial relations.

The transfer ruble was put into "circulation" 18 years ago by the International Bank of Economic Cooperation (MBES), which was created by a decision of eight CEMA countries--Bulgaria, Hungary, the GDR, Mongolia, Poland, Romania, the Soviet Union and Czechoslovakia. Cuba and Viet Nam joined it later. The new currency unit that was introduced by the MBES made it possible to avoid the clearing method of accounting and extending credits. This method envisioned mandatory equality of commodity deliveries and payments and their annual balancing. That is, the following principle was in operation: exports are equal to imports. Under these conditions the volume of commodity turnover, as a rule, is determined by the state with the lesser exports capabilities. For some time this system corresponded to the level of economic development of the CEMA countries and, moreover, made it possible to make payments without withdrawing convertible currency or gold.

With the growth of foreign economic ties this system became a certain impediment to the cooperation of the sister countries. For example, with money in a clearing account from the sale of commodities to one of the partners, the country could use it only for payment for items that were delivered by the same partner. These funds could not be used to purchase products from a third country.

Beginning on 1 Jan 1964, when the MBES went into operation, a collective currency went into effect--the transfer ruble. As distinct from any national currency, including the Soviet ruble, we repeat, the transfer ruble does not exist as a monetary unit although, of course, it is backed by gold. It is used only for exporting commodities and serves only for international accounts. As for the name of the new currency, the name "ruble" was selected for it since previously the concept "clearing ruble" was used for keeping accounts. And it is a "transfer" ruble because it is transferred from one account to another.

How are these accounts kept? Let us say that Czechoslovakia has delivered a batch of trucks to Viet Nam at the same time that it has purchased from the Soviet Union, say, equipment for an atomic electric power station. Information about the sums of the reciprocal payments go then to the electronics computer. A certain sum is transferred from the account of Viet Nam to the account of Czechoslovakia, and from the latter account to the account of the USSR. The accounts can now be cleared considerably more rapidly than with the clearing method. And acceleration of the circulation of capital, as we know, produces an appreciable economic effect.

The transfer ruble fulfills all the main functions of currency: a measure of value, a means of payment and a means of accumulation. Concrete prices for the countries' reciprocal trade are established in transfer rubles. They are also used for evaluating joint integration facilities and several other spheres.

During the first years when the transfer ruble was in effect, some people in the West doomed the new currency to failure. Time, however, has proved its viability and effectiveness. Now the transfer ruble serves for a large part of the overall foreign trade turnover of the CEMA countries.

COPYRIGHT: "Agitator Kazakhstan", No 14, 1982

11772

CSO: 1825/98



REVIEW OF ISSUES DISCUSSED AT SOVIET-FINNISH SYMPOSIUM

Moscow FOREIGN TRADE in English No 8, Aug 82 pp 17-19

[Article by Yu. Piskulov: "USSR-Finland: Cooperation Between Equal Partners"]

[Text] A Soviet-Finnish symposium on trade and economic cooperation attended by 450 business people and newsmen from both countries was held in Helsinki last April. Sponsored by the Finnish newspaper *Kauppalehti* and the Soviet *Economicheskaya Gazeta* the symposium was a striking example of extended cooperation in various spheres of the two nations' public life, as E. Rekola, Finnish Foreign Trade Minister, pointed out in his opening address.

The symposium coincided with the anniversary celebration of the 1948 Soviet-Finnish Treaty of Friendship, Cooperation and Mutual Assistance, a solid foundation of the expanding cooperation between the Soviet Union and Finland.

During the recent visit of President of Finland M. Koivisto to the Soviet Union it was emphasized that the growing Soviet-Finnish trade turnover was a practical proof of the long-term character of economic cooperation. It indicates at the same time that the bilateral agreement and the settlement clearing system hold the promise of increased trade.

A. Karjalainen, Director-General of the Bank of Finland, who chairs the Finnish part of the Standing Inter-Governmental Soviet-Finnish Commission on economic cooperation, spoke of the prospects of Finland's economic development in the near future, the internationalization of the country's economy and the benefits of Soviet-Finnish exchange for both countries.

In the early 1980s, he indicated, Finland's growth had again been relatively slow, but there was no important regress either in foreign economic relations or domestic ones.

In 1981 Finland's GNP growth approximated one per cent. In 1982 it is expected to be equal to 0 or 0.2 per cent. Next year it may rise to 1.5 per cent, which is slightly better than this year; however, it cannot be said that the forecast for the growth rates has a reliable foundation.

Due to the balanced development Finland's convertible currencies reserve kept at a 2.3-month import cost level is a good international indicator. The stocks of non-convertible, mainly clearing currency (and this is natural-

ly a phenomenon of somewhat different nature) will be positive owing, in the first place, to trade with the Soviet Union.

The past 10-15 years have witnessed essential internationalization of the Finnish economy which, in A. Karjalainen's understanding, implies, first of all, capital investments of foreign enterprises in Finland and those of Finnish enterprises abroad. Though progress along these lines is under way it is comparatively modest. For instance, by the end of the last year investments in foreign enterprises in Finland (i.e. enterprises with more than 20 per cent of foreign capital) approximated to 1,000 million Finnish marks. At the same time investments in Finnish enterprises abroad (i.e. enterprises with more than 20 per cent of Finnish capital) exceeded 1,000 million marks. Thus, in 1981 both types of investments were almost fifty-fifty. Roughly half of the 500 foreign enterprises in Finland are Swedish. The rest belong to other countries.

It is difficult to estimate accurately the effect of Soviet-Finnish trade on Finland's economic growth. In any case it accounts for a very considerable part of the country's GNP which in the past was considered unthinkable. In other words, were it not for a significant increase in Soviet-Finnish trade the last year's rise in GNP would have been much less than the one per cent achieved, or even zero. This trade is also the reason behind Finland overtaking many industrial Western countries in rates of growth in the last years of the past decade.

Trading with the Soviet Union helped Finland overcome the two oil crises of the 1970s much easier than other oil-importing coun-

tries as it could quickly settle its increased oil bills with deliveries to the USSR of its home-produced goods. Prices for Finnish exports to the East satisfactorily followed the pattern of rising prices of exports to the West no matter what products were involved—engineering, shipbuilding, timber or consumer goods. Recent lower prices for oil will reduce production costs and improve prospects for Finland's economic growth.

The Soviet-Finnish trade which constitutes a quarter of the Finnish foreign trade turnover also has a many-sided positive effect on employment in Finland, particularly in the engineering and shipbuilding industries. The largest firms here have many subcontractors all over the country which make parts and assemblies for the machines exported to the Soviet Union. Purchases of timber by the timber and woodworking industries provide more jobs in woodworking industry and timber transportation. Recent heavier sales of consumer goods to the Soviet Union also have a positive impact on employment as more small and medium-size businesses are involved. Employment in Finland has been favourably affected by the construction of various projects in the Soviet Union. In addition Finnish entrepreneurs and workers have acquired valuable experience and skills which are of interest to respective enterprises in other countries seeking entry into the Soviet market.

No matter whether it is export of goods, services or technology to the Soviet Union or the other way around—their import to Finland—this activity is extremely interesting because the trading partners belong to different socio-economic systems, and because one of them is a great power and the other a small nation. This

work was interesting both theoretically and practically as it was necessary to seek suitable forms, methods and ways most useful and acceptable to each side. It would be no exaggeration to say that it was a unique, trail-blazing operation of historic significance having broad international impact.

N.N. Smelyakov, USSR Deputy Minister of Foreign Trade, dwelt on the main guidelines of the Soviet foreign economic policy in 1981-1985 (11th Five-Year-Plan Period); he analyzed the progress and prospects of the Soviet-Finnish trade, economic, industrial, scientific and technical cooperation.

The USSR and all its people are making consistent efforts to put into practice the directives of the 26th CPSU Congress for the further promotion of foreign trade and economic, scientific and technical cooperation with foreign countries. As a result, the country's foreign economic ties are becoming increasingly vaster and diversified. As against 31,500 million rubles in 1980 our trade with industrial capitalist nations in 1981 reached the 35,300 million rubles target accounting for almost one third of the Soviet Union's total foreign trade turnover.

Following the principles of peaceful co-existence of states with different social systems the Soviet Union will continue to develop mutually profitable economic ties with interested countries, said N.N. Smelyakov. Greater cooperation with the West European nations is of special interest because of their geographical proximity and mutually complementary economies.

The Soviet-Finnish relations are a good example of equal, mutually advantageous cooperation be-

tween countries with different social systems. Among industrial capitalist countries Finland is second only to the FRG in our country's foreign trade. The share of the Soviet Union in Finland's foreign trade turnover approximated 24.1 per cent in 1981.

The 1948 Treaty of Friendship, Cooperation and Mutual Assistance between the Soviet Union and Finland is the backbone of Soviet-Finnish relations. It is the basis of the long-term, planned cooperation in trade, economics and industry. Today business relations between the two countries come under the Long-Term Programme for the Development and Deepening of Trade, Economic, Industrial, Scientific and Technical Cooperation up to 1990 and the Protocol extending the Programme's term to 1995 and specifying and complementing its contents and also, the Agreement on Trade Turnover and Payments for 1981-1985.

Under the Programme the estimated trade turnover in 1981-1985 is to be 18,000-20,000 million rubles; in 1986-1990 it is expected to reach 22,000-24,000 million rubles. The Programme provides for new orientations in construction activities in both countries and for a substantial increase in co-operated and specialized manufacture.

In 1981 the trade turnover between our countries exceeded 5,000 million rubles which is five times as much and even more than in the first five years of trading (1951-1955). The Soviet Union is the largest importer of Finnish-made shipping and engineering products, timber and paper goods and fertilizers. Also, its purchases of Finnish farm products and consumer goods increase each year.

The main articles of Soviet export to Finland are energy car-

riers: oil and oil products; coal, coke; natural gas and electricity; increasing deliveries of chemicals, machines and equipment, including those made under cooperated manufacture agreements. The Protocol to the Long-Term Programme envisages a two to threefold increase in Soviet machinery and equipment shipments by 1990, as compared with the present level.

The present rates of trade growth between our countries indicate that the trade turnover in 1981-1982 may reach the 10,000 million rubles mark, i.e. half of the sum expected at the end of the 1981-1985 period and it may exceed the figure expected to be reached in 1986-1990.

Other forms of economic cooperation, noticeably, the construction of industrial projects on the territory of both countries are also making good headway.

The construction of the following enterprises is in progress: a mining and dressing complex in Kostomuksha, a pulp and paper factory in Svetogorsk, and hotels in Vyborg and Leningrad. Talks are in progress on the participation of Finnish firms in the building of a series of new projects, including a sea port near Tallinn, a railway wagon repair works in Tosno, etc.

Orders have been placed with Finland for residential and other buildings along the sites of the Urengoi-Uzhgorod gas pipeline. The growing technical potential of our countries enables Soviet-Finnish trade to be further extended and diversified through the involvement of more engineering products in the turnover. Cooperated manufacture becomes an important factor. Twelve agreements on cooperated and specialized manufacture have been concluded to cover over 80 items, including an atomic-powered icebreaker and

up-to-date shipping equipment, special purpose freight cars, pulp and paper equipment and forestry machinery, electricity-saving devices, etc.

An important reserve for expanding Soviet-Finnish commerce, particularly in cooperated manufacture of machinery and equipment, is in scientific and technical cooperation, and greater exchange of licences and know-how.

An ambitious and very promising projects would be the development of oil and gas fields on the continental shelf of the Soviet Union's northern seas and also increase of our natural gas deliveries and in this connection, extension of the transporting gas pipeline construction on the Finnish territory.

The present-day Soviet-Finnish system of trade and economic relations and the high level of both countries' economic, scientific and technical development spell out good prospects for mutually beneficial cooperation in traditional and new fields.

The sound progress of Soviet-Finnish commerce indicates that the clearing system of balanced payments did not impede the positive development of bilateral relations: on the contrary, it helped their orderly growth, as well as higher competitiveness in many Finnish industries.

The more than 30 years experience of cooperation between our countries, N.N. Smelyakov continued, indicates that the transaction of trade on a balanced clearing and settlement basis requires constant efforts by the partners to improve and extend the trade pattern, including in it new goods and services.

Last December when addressing the 25th meeting of the Soviet-Finnish Inter-Governmental Standing Commission on Economic Cooper-



ation N.S. Patolichev, Soviet Foreign Trade Minister, emphasized that our trade and economic relations with Finland were important in the USSR plan for social and economic development for the current five years and the period ending in 1990. The stabilizing, positive effect of advanced long-term planning of these relations has more than once been stressed in Finland. The joint Soviet-Finnish communiqué following the recent visit of President M. Koivisto to the Soviet Union says in part: «The Soviet Union and Finland will continue to make efforts to develop their bilateral economic relations. The sides have reaffirmed their intention to keep on developing stable, balanced and mutually profitable trade based on five-year agreements on trade turnover and payments and the specifying of annual protocols on mutual goods deliveries thereof. It has been recognized expedient to make active use of the possibilities of joint construction of industrial and other facilities on the territory of both countries, and of developing cooperated and specialized manufacture.»

At plenary meetings and during discussions of working groups participants in the symposium discussed the progress and prospects of Soviet-Finnish trade and economic relations in detail. Particular attention was devoted to new, promising forms of cooperation, specifically, joint construction of industrial and other facilities on the territory of the Soviet Union and Finland, as well as third countries. All that is necessary for such cooperation is present: the relevant experience,

the willingness to cooperate and mutual confidence.

Cooperated manufacture was an important item on the agenda of the symposium. It was emphasized that such cooperation was a reserve for expanding mutual trade in machinery and equipment and, first of all, for the export of Soviet-manufactured engineering products to Finland.

The symposium appraised positively the activities of the Soviet-Finnish joint stock companies designed to promote more effective trading. There are seven of them; four are dealing with sales of Soviet-made machines and equipment.

Good progress in frontier trade between the Soviet Union and Finland was mentioned. At present the All-Union Association, Lenfintorg maintains business contacts with some 300 Finnish firms, selling almost 200 and buying over 180 different goods.

The seminar unanimously agreed that the mass media had played an important part in promoting Soviet-Finnish trade and economic relations. It was emphasized that the mass media may and must contribute to better business cooperation and trust between nations, help them know one another better and exchange mutually enriching experience.

The Soviet-Finnish symposium on trade and economic cooperation confirms the intention of both sides to use all opportunities for furthering trade and economic cooperation between the Soviet Union and Finland and seek new forms and spheres of application.

COPYRIGHT: "Vneshnyaya torgovlya" 1982  
English translation, "Foreign Trade", 1982

CSO: 1812/186

## TRADE WITH INDUSTRIALIZED COUNTRIES

### AUSTRIA'S ROLE IN EAST-WEST TRADE OUTLINED

Moscow SOVETSKAYA ROSSIYA in Russian 4 Aug 82 p 3

[Article by E. Khorn, member of the Editorial Board of the newspaper PRESSE, Vienna: "Collaboration Required"]

[Text] Accumulated experience indicates that successful economic collaboration between East and West necessarily requires a continuation of the process of relaxation of international tension. It was during the 1970's -- a period in which the advantages of such a course were clearly manifested -- that trade between the socialist and capitalist countries developed in an especially dynamic manner. According to data supplied by the Vienna International Institute of Economic Contrasts, CEMA member states in 1979 realized an increase in their exports of 34.2 percent and 15.8 percent in their imports. In light of this present sharpening of international tension, these indicators have fallen.

Just as in the past, despite all of the complications, opportunities still exist for continuing and further developing collaboration. The federal chancellor of Austria B. Kreisky emphasized in one of his speeches: "The situation is such that eastern Europe is considerably more rich in energy resources than is western Europe and this situation has promoted improved collaboration, which has a future. It is of interest to those who require coal and gas and to those who wish to obtain appropriate goods in exchange for their energy carriers.

However the plan to build a gas pipeline from Urengoy to western Europe has resulted in protracted discussions being held in the capitalist countries, discussions aroused by a deterioration in the political climate. This proves that mutual trust is of vital importance for carrying out the large-scale plans for achieving cooperation between East and West. In the absence of a continuation of the policy of relaxed international tension, trade and economic collaboration between countries having different social systems will not soon prosper.

Austria is the country in which the well known "Vienna atmosphere" prevails not only during political meetings, discussions and conferences. Vienna is an important location for carrying out trade and economic operations. More than 450 western firms and banks have representations here specializing in trade with the East. Roughly 100 of them have been opened by corporations of the U.S.A. and the FRG. The socialist countries also selected the capital of Austria as the location for maintaining contacts with the West: 95 corresponding representations have been opened here.

Among the industrially developed capitalist countries, Austria occupies second place (after Finland) in trade with CEMA member states. As early as 1968 the alpine republic concluded its first "gas -- pipeline" agreement with the USSR. It subsequently served as a model for similar arrangements to be drawn up between the Soviet Union and other western European countries.

But similar to any other sphere of human endeavor, opportunities also exist for realizing improvements in trade and economic relationships. Trade turnover between the two countries is not in balance. A large role in this regard is being played by Austria's importing of coal, natural gas and petroleum. But since we need these products, we must strive to increase our exports to the USSR. A department head of the Austrian Ministry of Trade, Y. Maysl, stated in this regard: "We are presently engaged in reducing the deficit in the trade balance. The long-term agreement for economic collaboration between the two countries, concluded in Vienna last year, should prove to be of great service in this regard." Here we have in mind the carrying out of various plans in the areas of chemistry and machine building. For the purpose of expanding collaboration, great importance is attached to motivating small and medium size Austrian enterprises into participating in such collaboration.

Of the CEMA member states, the USSR is Austria's largest trade partner. It occupies 6th or 7th place among the purchasers of Austrian goods and 3d place among the suppliers of goods for the Austrian market. Recently the Austrian concern "Fest Al'pine" received an order for the construction of a steel casting plant at Zhlobin in Belorussia. The enterprise must be placed in operation in record time -- within 33 months. Economic collaboration can be further developed through the carrying out of joint programs in three countries -- especially in developing states.

The federal president of the Austrian Republic, Rudolf Kirchschlager, visited the USSR in May of this year. During the course of this visit, both sides emphasized their resolve not only to proceed cautiously with regard to that which has already been achieved but also to intensify the rates for economic collaboration, raise its effectiveness and find new forms for contacts. In short, in our bi-lateral relationships we intend to proceed further along the planned path.

7026

CSO: 1825/92

## GENERAL

### DEFINING EFFECTIVENESS OF IMPORTING EQUIPMENT, QUESTIONS OF ECONOMIC STIMULATION

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 8, Aug 82 pp 80-89

[Article by S. Zakharov, subdivision chief of USSR Gosplan: "Determining the Effectiveness of Importing Equipment and Questions of Economic Stimulation"]<sup>7</sup>

[Text] The Basic Directions for the economic and social development of the USSR during 1981-1985 and the period up to 1990 set the task of efficiently utilizing the advantages of international division of labor and the possibilities of foreign economic ties for increasing the efficiency of public production. Thus foreign economic activities should contribute to fuller satisfaction of the demands of the national economy for progressive equipment, the latest technological processes, raw materials and processed materials, and also the demand of the population for consumer goods. "It is necessary to figure out the reasons" emphasized L. I. Brezhnev in the accountability of report of the CPSU Central Committee to the 26th Party Congress, "why we sometimes abandon our priorities and lose large amounts of money on foreign purchases of technical equipment and technologies which we are quite capable of producing ourselves, and which we can frequently produce even better."<sup>1</sup>

In order to make an intelligent decision about importing equipment, or, conversely, to determine the expediency of producing domestic equipment instead, it is necessary to do a comparative analysis of the possible variants, taking into account the influence of foreign trade and domestic prices. Beginning in the 1950's domestic prices for imported equipment were determined by multiplying foreign trade prices (expressed in exchange rubles) by coefficients that reflect the existing ratios between wholesale prices of similar domestic equipment and foreign trade prices on imported equipment. The coefficients were established for a number of years for various groups of equipment on the basis of comparing domestic and foreign trade prices of the commodity representatives. With this procedure domestic prices for imported and domestic equipment were on the same level.

But with time the shortcomings of this procedure for price setting were revealed. Fluctuations in world prices effected domestic prices of imported equipment. Increased world prices for equipment, which have recently exceeded domestic prices for similar domestic equipment 1.5-2-fold and more, have violated the unity of the price level. It turned out to be less advantageous to utilize imported equipment than less expensive domestic equipment.



The imperfection of the indicator of the budget effectiveness of importing equipment, determined by the ratio between the domestic and foreign trade prices, was also revealed. This ratio reflected the amount of savings on national economic expenditures resulting from refraining from producing domestic equipment per exchange ruble of foreign trade price. But now the domestic price of equipment, increasing after the import price, has ceased to reflect expenditures on its production, and this indicator of effectiveness has lost its meaning.

In recent years, in order to account more fully for the actual currency payments, domestic prices for many kinds of imported equipment have been established at a level no lower than the import value, and when purchased on credit--with the addition of the interest for the credit. This way the effectiveness of importing equipment by foreign trade organizations, as before, continues to be determined by the ratio between the domestic price of imported equipment and its exchange value.

If, for example, the value of the equipment is equal to 10 million exchange rubles and it is purchased on credit under the following conditions: advanced cash payments--20 percent, period for repaying the credit--10 years, annual interest rate--7 percent, then the sum of interest payments will amount to about 3.1 million exchange rubles, the price of the release of the equipment to the client--13.1 million rubles, and the indicator of the effectiveness of the import transaction--1.31.

Let us note that this procedure for calculation has the following shortcomings. In the first place, the amount of the indicator of effectiveness does not react to the change in import prices: increased cost of the equipment does not lead to a reduction of this indicator and, conversely, savings of currency with the purchase does not lead to an increase, since the domestic price changes in correspondence to the import price. In the second place, because of the deterioration of credit conditions (increased interest rates), the indicator of effectiveness does not decrease, but increases. In the third place, the productivity of the equipment and its operational characteristics are not directly taken into account when the domestic price is established.<sup>2</sup>

In order to increase the scientific substantiation of the methodology for determining prices and the effectiveness of importing equipment and to create a better system of economic stimulation of the activity of foreign trade organizations in industry, let us consider possible ways of accounting more precisely for national economic expenditures on the foreign purchase of machine tools and machines, and the economic results of their utilization.

When determining national economic expenditures on imported equipment it is necessary to take into account expenditures on the production and export of goods that are delivered in payment for this equipment if the exports are stipulated. But if the export of specific goods is not stipulated, when determining expenditures it is necessary to pay attention not to the purchasing power of the expended currency, which is provided by translating exchange payments into domestic USSR rubles using special coefficients ( $k_v$ ) which characterize the average effectiveness of importing goods for the corresponding currency and take into account the condition of mutual accounts between the USSR and other countries. When calculating these coefficients in the automated system of planned accounts the value of the imported goods is reduced to the level of the existing wholesale prices that

reflect expenditures on the production of similar goods in the USSR. In particular, one applies a reducing coefficient (approximately 0.7) to the value of consumer goods and foodstuffs which are sold by foreign trade organizations to the national economy at the level of retail prices, which contain turnover tax, in order to make their value correspond to the level of wholesale prices. The methods for determining the economic effectiveness of USSR foreign economic ties, which were approved by a decree of the USSR Gosplan of 25 Feb 1980, envision that the coefficients  $k_{kr}$  are applied in calculating the effectiveness of all forms of foreign economic and scientific-technical ties.

The average effectiveness of imports shows the value of goods in domestic rubles which are purchased for each exchange ruble. Multiplying exchange payments by this coefficient translates them into the value of goods which could have been purchased. Thus one takes into account the losses of the national economy that are related to refraining from importing other goods. The condition of reciprocal accounts is reflected in the amount of purchasing power of the corresponding kinds of currencies through determining possible losses because of forced postponement of purchases for exchange profit (with an active remainder) and, conversely, through accounting for the advantages of those exchange funds which typically have a relatively high purchasing power and are in short supply.

When solving the problems of importing equipment on credit it is necessary to recall that delaying payments certainly does not free one from paying the complete nominal value of the equipment and, moreover, it is increased by the amount of interest on the credits. The purchase of equipment on credit is economically expedient only when the increased cost can be compensated for through the effect of the productive utilization in the national economy of the funds that are temporarily released because of the deferment of payment. While it is necessary to pay for credit with a certain amount of interest on the amount of borrowed funds, it is expedient to use credit if the profit obtained from the utilization of the funds is greater than the sum of the interest.

The significance of the various conditions for purchasing equipment on credit (the period of the extension of credits, the interest rate and so forth) are integrated into the coefficient of credit influence ( $k_{kr}$ ) which characterizes the ratio between the aforementioned currency payments (reduced to the year of the utilization of the credit) and the nominal cash value of the equipment. In practice the coefficients of the credit influence are calculated relatively simply, using special tables of multipliers.<sup>3</sup> The table presented here for several of the most widespread conditions of foreign economic cooperation shows the multipliers that have been determined under the condition of obtaining profit in the amount of 15 percent per year from funds released as a result of postponing payments.

Table.

Annual Interest Rate	Period for Repaying Credit, Years			
	3	5	8	10
2	0.793	0.714	0.620	0.568
5	0.841	0.780	0.707	0.668
7	0.873	0.824	0.766	0.734

When equipment valued at 100,000 rubles is purchased on credit with a 7 percent interest rate and a period of repayment of 10 years, the sum of payments on interest for the credit is 38,500 rubles. If during this 10-year period the temporarily released funds are used in the national economy with an effectiveness of 15 percent per year, the sum of profits will amount to 82,500 rubles; the net profit will be 44,000 rubles and this amount, calculated for the year of delivery of the equipment (the year of the utilization of the credit) is 26,600 rubles. This effect is also obtained by the coefficient of credit influence.

Taking this into account, national economic expenditures (V) on the purchase of imported equipment can be determined according to the formula:

$$Z = V_i k_v k_{kr} \quad (1)$$

where  $V_i$  -- exchange value of equipment.

The coefficient for translating exchange payments into domestic rubles is, say, two rubles per exchange ruble, and the coefficient of the credit influence in our example is determined by the amount  $k_{kr}$ , equals  $0.2 + 0.73 (1 - 0.2) = 0.787$ , where 0.2 -- the proportion of advanced payments in cash, then the complete economic expenditures on importing equipment amounts to  $3 = 10 \cdot 2 \cdot 0.787 = 15.7$  million rubles. As we see, the existing policy for price setting the domestic price for the delivery of imported equipment to the client, established in the amount of 13.1 million rubles, is 2.6 million rubles less than the national economic expenditures on acquiring the equipment. Ignoring the purchasing value of the currency and the conditions for the extension of credit can lead to an increase in the domestic price as well.

In keeping with existing methods, the economic effect from importing equipment is determined by the difference between the price for the delivery of this equipment to the client and expenditures of the national economy on its purchase. Consequently, it is possible to import equipment without a loss only when the price is less than the expenditures:  $Ts_i \geq V_i k_v k_{kr}$  (formula 1) thus determines the lower limits of the domestic price for imported equipment.

When establishing domestic prices and calculations of the effectiveness of importing equipment it is necessary to evaluate the latter from the standpoint of expected economic results of its utilization as well.<sup>4</sup>

In order to determine the price of imported equipment whereby the effectiveness of its utilization at the corresponding enterprise will be no less than the normative profitability ( $r_n = 0.15$ ) one can proceed from the inequality:

$$\frac{\Delta Ts + \Delta I - r_{am} Ts_i}{Ts_i - \Delta K} \geq r_n \quad (2)$$

where  $\Delta Ts$  -- the increased annual volume of commodity output of the enterprise when operating with imported equipment;

$\Delta I$  -- the reduction of annual current production outlays as a result of economizing on raw materials, fuel, processed materials and wages;

$Ts_i$  -- the unknown value of the imported equipment;

$\Delta T_i$  --amortization deductions from the value of imported equipment;  
 $\Delta K$  --reduction of the average annual value of the enterprise's circulating capital as a result of economizing on raw materials, fuel, processed materials and wages.

From the expression (2) one determines the evaluation of the equipment:

$$Ts_i \leq \frac{\Delta Ts + \Delta I + r_n \Delta K}{r_{am} + r_n} \quad (3)$$

The evaluation that is obtained is the extreme maximum permissible domestic price for imported equipment or, in other words, the upper limit of the price which can be acceptable from the standpoint of the client-consumer of the equipment.

Let us continue our example. Say that the installation of imported equipment increases the annual output of products from the enterprise by 3 million rubles and reduces current expenditures by 2 million rubles; then we can assume that the value of circulating capital will decrease by 2 million rubles. With a norm of amortization deductions of 10 percent per year, the upper price limit, determined according to formula (3), will be 21.2 million rubles.

If one establishes the domestic price for imported equipment as equal to the price of the upper level, the additional profit (P) from the utilization of this equipment will be:

$$P = \Delta Ts + \Delta I + r_n \Delta K - r_{am} Ts_i = 3.18 \text{ million rubles/year}$$

This amount of annual profit is equal to obtaining for one time  $3.18:0.15 = 21.2$  million rubles, which corresponds to the price of the upper limit calculated above.

V. Savost'yanov and A. Markovich also suggest estimating the value of imported equipment on the basis of the profit obtained from its utilization.<sup>5</sup> They also emphasize that this is the method K. Marx once used when determining the price of land when "any particular monetary income can be capitalized, that is, regarded as interest on imagined capital."<sup>6</sup> V. Savost'yanov and A. Markovich, do not use a unified normative of profitability, which corresponds to the average profit norm, for evaluating equipment. They evaluate equipment on the basis of an equation of the profitability of imported equipment with the profitability of similar, domestically produced equipment, and if there is no similar equipment, they suggest using the branch normative.<sup>7</sup> In their examples the authors evaluate imported technological lines for producing ammonia as one enterprise in terms of the normative of profitability of 23 percent, at another--26 percent, and at a third--14 percent. In our opinion, such a differentiated normative unjustifiably reduces the evaluation of more progressive equipment, and the evaluation and the effectiveness of importing outdated equipment, conversely, increase.

Having determined from formula (3) the evaluation of imported equipment which reflects the economic results of its utilization, one can, by comparing it with the national economic expenditures previously calculated from formula (1), obtain the relative ( $Kh_i = Ts_i : Z$ ) and absolute ( $E = Ts_i - Z$ ) indicators of the economic effectiveness of importing equipment. Importing is advantageous if the indicator of relative effectiveness is greater than one, and the effect is determined as a positive amount.



In our example the effectiveness of importing is equal to  $21.2 : 15.7 = 1.35$  rubles per 1 ruble of expenditures, and the economic effect-- $21.2 - 15.7 = 5.5$  million rubles.

The calculation of the effect in the form of the difference between the economic results and the utilization of imported equipment and expenditures of the national economy on its acquisition abroad is sufficient for determining the expediency of importing equipment under the condition that similar equipment cannot be produced at domestic enterprises. But if the manufacture of this equipment can be organized, then expenditures on its purchase abroad should be additionally compared with another economic result of importing, namely the savings on expenditures because of refraining from manufacturing it domestically. If expenditures on domestic manufacture turn out to be less than expenditures on importing, the variant of domestic production is preferable to the variant of importing, despite the fact that the first calculation showed a positive effect.

Let us assume that expenditures on domestic manufacture of equipment similar to imported equipment are equal to 14 million rubles. In this case they are less expensive than imported equipment by  $15.7 - 14 = 1.7$  million rubles, and their manufacture is preferable since the effects on the utilization will amount to  $21.2 - 14 = 7.2$  million rubles.

If the demand for equipment can be satisfied only partially through domestic production, expenditures on importing this part of the equipment should be compared to expenditures on its domestic production. But the import of the additional equipment is based on a comparison of expenditures on import and the upper limit of the internal price which reflects the effectiveness of the utilization of the equipment by the consumers. As one can note, in order to determine the expediency of importing equipment, it is necessary to substantiate the amount of overall demand for the equipment being considered and determine the possible degree of its satisfaction as a result of domestic production.

When determining the effectiveness of importing equipment from some particular country instead of purchasing it from another country, expenditures on importing it from the first country should be compared with the savings on exchange payments from the second (taking into account the differences in the purchasing power of the currency and the conditions for granting credit). Such a calculation substantiates, in particular, the expediency of organized specialized production of equipment in the CEMA countries instead of purchasing it with freely transferable currency. Thus, in the case considered above, it is necessary to pay attention to the economically substantiated volumes of overall demand for the equipment under consideration, and the possible amounts of its domestic production and importation with freely transferable currency. Here one takes into account only those volumes of imports by which purchasers for this kind of currency will actually be reduced.

Such, generally, are the methods for calculating the actual economic effectiveness of importing equipment, taking into account complete expenditures on its purchase and the effectiveness of its utilization, the interchangeability with domestic equipment, and the possible degree of satisfaction of the demand through internal production.

Note that if the established price of delivery of imported equipment is equal to the upper limit calculated from formula (3), the foreign trade association is motivated to purchase more progressive and effective technical equipment abroad. But if precisely this price is established, the effectiveness of the activity of the enterprise that has obtained the imported equipment will always be at the level of normative profitability whether it acquires highly effective or less effective technical equipment. Thus one level or another of the foreign trade price and the amount of expenditures of the national economy on purchasing the equipment are not reflected in the evaluation of the economic activity of the client enterprise. As a result, there appears in industry a situation similar to the one existing in the area of producing products for export, whereby the products are delivered by the industrial enterprises to the foreign trade organizations at domestic prices which effect neither the level of foreign trade export prices nor the economic effectiveness of the exports.

In order to create economic stimuli for the consumers of imported equipment and other goods, which contributes to effective imports and limits the desire for economically unjustified purchases in cases where the effectiveness of their utilization does not compensate for expenditures on imports or where there is a possibility of less expensive domestic production of these products instead of importing them, the price for releasing imported equipment should be established at a somewhat lower limit, which is determined from formula (3), but is higher than expenditures on imports calculated according to formula (1). This can be realized if one establishes a particular fixed proportion ( $\alpha$ ) of the economic effect ( $E$ ) and reduces the price of the upper limit by this, thus establishing the actual domestic price for imported equipment ( $T_{sf}$ ) :

$$T_{sf} = T_{si} - \alpha E = T_{si} (1 - \alpha) + \alpha V_i k_v k_{kr} \quad (4)$$

From the formula one can see that the actual domestic price will consist of two variables. The first depends on the evaluation of the equipment which is determined by the effectiveness of its operation, and the second--on the exchange value of the equipment translated into domestic rubles. This formula for price setting cannot always provide for a lower domestic value of imported equipment as compared to the level of existing wholesale prices for similar domestic equipment. But this will help to eliminate cases of unjustified increase in the cost of production carried out on imported equipment since the overall increase in foreign trade prices of all groups of goods, with stable USSR domestic prices, will lead to a reduction of the coefficient  $k_v$ , which reflects the purchasing capacity of foreign currency. An increase in the foreign trade price of imported equipment  $V_i$  will be compensated for if the degree of this increase does not exceed the average growth of foreign trade prices. Thus, an increase in prices for equipment which takes place largely as a result of inflation on the world markets of capitalist countries is compensated for by an increase in the exchange rate of the Soviet ruble with respect to foreign currency, which is reflected in a reduced coefficient  $k_v$ . The proposed procedure for domestic price setting protects us from inflation of prices on the world market. Therefore we have a right to expect that an unjustified increase in the estimated cost of facilities, increased expense of capital construction and increased production costs of imported equipment will not effect us with this policy for price setting.

Let us explain this example. If the proportion of the effect  $\alpha$  is established as 0.3, then for the previously considered conditions for the importing of equipment the actual price calculated according to formula (4) will be

$$Ts_f = 21.2(1-0.3) + 0.3 \cdot 10 \cdot 2 \cdot 0.787 = 19.6 \text{ million rubles}$$

Let us assume that the average price level on the world market for a certain period of time increases 1.25-fold. This entails a reduction of the purchasing capacity of foreign currency in relation to domestic USSR prices and the coefficient decreases:  $k_v = 2 : 1.25 = 1.6$ . If the foreign commercial price for equipment that is purchased increases, say, 1.2-fold and amounts to 12 million exchange rubles instead of 10, the actual domestic price will be equal to

$$Ts_f = 21.2 (1 - 0.3) + 0.3 \cdot 12 \cdot 1.6 \cdot 0.787 = 18.4 \text{ million rubles}$$

As we see, despite the increased foreign trade price of imported equipment, its actual domestic price has even decreased.

If the increase in world prices for equipment is not accompanied by the corresponding increase in prices for other goods in USSR foreign trade circulation, particularly by an increase in prices of goods that are sold on the foreign market to pay for imported equipment, the compensating role of the coefficient  $k_v$  will be inadequate. In this case the country's expenditures on importing equipment can become higher than expenditures on manufacturing it at domestic enterprises. Naturally, it would be inexpedient to purchase this equipment abroad and it should be produced in the country. But if it is impossible to manufacture as much equipment as is needed, importing such equipment is a social necessity, and the payments for it should be recognized as socially necessary expenditures.

How will it be with internal prices when part of the equipment is produced by domestic plants and relatively cheaply, while the other part is imported at great expense? Various answers to this question are known: first, ignore the increased cost resulting from high import price, and deliver the imported equipment to the client enterprises at the relatively low wholesale prices in effect in the country; second, deliver the equipment to enterprises at various prices (domestic equipment at the prices that are in effect, and imported equipment at higher one). A third variant is also possible: calculate the average weighted expenditures, taking into account both the manufacture of domestic equipment and the purchase of similar imported equipment, and raise domestic prices so that they are the same for all consumers while at the same time compensating for all national economic expenditures on their manufacture and import.

The first variant of the solution, in our opinion, is unacceptable since the national economy is artificially protecting itself from the influence of real world prices, the level of prices for acquired equipment is lower than socially necessary expenditures, the appearance of price reduction is created so that industry has unjustified demands for imported equipment, and the effectiveness of producing products with this equipment is artificially increased.

As for the second and third variants they can both be accepted for price setting. In the practice of Soviet price setting there are examples of the establishment of prices for machines and equipment on the basis of individual expenditures of specific enterprises and prices of industry that reflect average branch expenditures. In order to stimulate the development of domestic production instead of importing, it would be preferable to have unified prices.

An important issue in improving domestic price setting for imported machines and equipment is providing for stability of prices. It is very important what with the regular changes in prices on the world market, since planning and drawing up estimates for capital construction are done long before the beginning of construction and before imports are developed. In order for the plan for capital investments to be stable and for construction estimates not to change during this period of the construction of the facilities, it is necessary to establish ahead of time the internal planned prices for imported equipment. They can be arranged on the basis of predictions and reflect the expected changes in the world market. Then the prices should be fixed for the planning period in terms of the individual years. But if the actual exchange value of the purchase of imported equipment is somewhat different from the previously proposed level, this will be reflected in the changes in the indicators of the effectiveness only of the activity of foreign trade associations. Stability of domestic prices also has its disadvantage: industry becomes indifferent to the conditions of the foreign market and its influence on the national economic effectiveness of imports. Based on national economic interests, it would be expedient to adjust the plan also, for example, as a result of a sharp increase in the prices of imported equipment, making a decision to accelerate the manufacture of domestic equipment. Thus, in order to create motivation for industry, it seems preferable to have a system not of stable prices, but of prices that reflect changes in the conditions of the foreign market. The actual fulfillment of the plan for capital construction will differ from the established one in this case.

Successful implementation of the tasks set by the 26th CPSU Congress in the area of developing imports of the latest technical equipment and technology, raw materials, processed materials and consumer goods depends to a large degree on the availability of currency resources and, consequently, on the development and increased effectiveness of exports of Soviet goods. This is why the task of improving the system of economic stimulation in the sphere of the production of goods for export is extremely crucial.

In order to extend economic stimuli to all areas participating in foreign trade cooperation, one should distribute the economic effect obtained by the country from foreign trade among industry, foreign trade organizations and the state. This can be done with stimulating internal prices and special increments to prices whereby industry delivers export goods and also with the help of deductions into the incentive fund. At the same time all prerequisites exist for realizing approximately the following system of autonomous financing.

The economic effect from exporting is determined by the difference between the currency revenues translated into domestic rubles and payments of foreign trade associations to the supplier of exported goods in domestic prices. We have in mind the fact that the prices reflect the socially necessary expenditures on the



production of products in the USSR and that also taking into account increments to compensate for economically justified expenditures by the suppliers of goods for the manufacture of products for export or local use. Depending on the amount of the aforementioned effect, one can establish increments (in the amount of 20-30 percent of the effect) to domestic prices for exported products, and also make deductions into the incentive funds of the foreign trade organizations. As a result, domestic prices will be established between the lower price limit, which is equal to expenditures on the production of products, and the upper price limit, which reflects the income level from the exports. Under these conditions industry will be motivated to reduce production expenditures and improve product quality so that the currency earnings from exporting will increase. In turn, the foreign trade association will be motivated to sell products at the highest possible export price and in currency with the greatest purchasing power. If, moreover, domestic prices for all kinds of products also reflect the effectiveness of the utilization of the products in the national economy (the necessary conditions for this exist in the theory of price setting), the effect for the foreign trade organization will decrease if high profit is obtained from utilization of the product within the country and, consequently, the exporting of kinds of products that are in short supply will be limited.

At the present time our foreign trade associations are motivated mainly to develop commodity turnover: they receive commission remuneration and deductions into bonus funds in direct relation to the currency value of the export goods and the value of imported goods that is measured in domestic prices. Thus stimuli for increasing the gross commodity turnover, which are obsolete in other branches of the national economy, are still in effect here. Moreover, the dependency of the remuneration on the currency value and not on the gross currency revenue (the value and revenues are distinguished in terms of amount and time when trade is carried out on credit) leads to a situation where the foreign trade associations are not motivated to export goods for cash, instead of selling them on credit, or to export them under more advantageous credit conditions.

In order to increase the motivation of foreign trade associations not only to develop commodity turnover, but also to increase its economic effectiveness, it is necessary to make the amounts of commission remuneration dependent on currency revenues from exports that are translated into domestic rubles and, in the final analysis, on the economic effect the country obtains from foreign trade. The profit of the foreign association should be determined as the difference between the commissioned remunerations and the association's current expenditures, and the proportion of profits deposited in the material incentive fund should be differentiated among the various associations, taking into account the specific features of individual associations resulting from their existing highly effective or less effective commodity structure. Improvement of the latter as a result of the association's activity in the direction of increasing the proportion of highly effective goods will lead to an increased economic effect for the national economy and a corresponding increase in the bonus fund of the foreign trade association.

# FOOTNOTES

1. "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, Politizdat, 1981, p 43.
2. It says in the methods for determining the budget effectiveness of USSR foreign trade which were developed by the USSR Central Statistical Administration in 1980: because of the fact that wholesale prices of machines, equipment, instruments, tools and spare parts which are imported from capitalist countries are presently set at no less than their import value, they do not reflect their technical and economic indicators or the effectiveness of their utilization in the USSR national economy, and indicators of the effectiveness of imports of these goods from capitalist countries are conventional in nature.
3. See: S. N. Zakharov, "Raschety effektivnosti vneshneekonomicheskikh svyazey (voprosy metodologii i metodika raschetov)" [Calculations of the Effectiveness of Foreign Economic Relations (Questions of Methodology and Calculation Methods)], Moscow, Ekonomika, 1975, pp 159-169.
4. O. Rybakov in the work "Ekonomicheskaya effektivnost' sotrudnichestva SSSR s sotsialisticheskimi stranami (teoreticheskiye i metodologicheskiye problemy)" [The Economic Effectiveness of Cooperation Between the USSR and the Socialist Countries (Theoretical and Methodological Problems)] (Moscow, Mysl', 1975), emphasizes that methods of determining the economic effectiveness which reflect the national economic approach and take all stages of economic circulation into account "should also take into account the effect from the utilization of the products in the national economy (for export products as an alternative variant, and for import products, the effect of their direct utilization in the national economy), the interchangeability of products, and the degree of satisfaction of public demands . . ." (p 56).
5. See PLANOVOYE KHOZYAYSTVO , No 7, 1978, pp 103-117.
6. K. Marx and F. Engels, Works, Vol 25, Part II, p 172.
7. See PLANOVOYE KHOZYAYSTVO, No 7, 1978, p 110.

COPYRIGHT: Izdatel'stvo "Ekonomika", "Planovoye khozyaystvo", 1982

11772

CSO: 1825/97

GENERAL

SCOPE OF SOVIET LICENSING AGREEMENTS VIEWED

Moscow APN DAILY REVIEW in English 22 Jul 82 pp 1-2

[Article: "Soviet 'Litsenzintorg': 20 Years on the Licence Market"]

[Text] Over the 20 years of its work, Soviet "Litsenzintorg" has concluded over 640 agreements to sell licences for Soviet inventions, a TASS correspondent was told at this foreign trade association. Its foreign partners have bought rights for the use of Soviet innovations in such industries as metallurgy, textile and food industry, medicine. They include the know-how textile and food industry, medicine. They include the know-how of evaporation furnace cooling, cold rolling of extra-thin-walled pipes, continuous steel casting installations, electric slag remelting, surgical suture instruments, medical drugs, production of Russian rye bread and sparkling wine of the champagne type.

Today "Litsenzintorg" can offer its foreign partners some 2,000 modern and highly efficient production processes and designs.

In the past twenty years there have emerged new forms of activity at the license market, among them joint production on the basis of licences in association with a number of leading foreign companies and creation of mixed societies. In the period from 1975 to 1981 "Litsenzintorg" signed more than 20 joint production agreements with socialist and capitalist countries' organizations and firms on the basis of licences bought or sold. Among them are agreements for the production of automated presses with the Anda Company (Japan), concrete pumps and mixers with the Stetter Company (Federal Germany), sportshoes with Adidas (Federal Germany), the indigenous Shtrek-1 machine with Maschinenfabrik scharf GMBH and others.

The setting up of mixed societies--Technicon jointly with the Italian company Italimpianti and Technounion with the West German Ferrostahl--as well as participation in the mixed societies of other Soviet associations in Finland, France, the United States and Australia, have greatly enlarged the potential for "Litsenzintorg" activity in capitalist countries. Now the association has a network of agencies in 35 countries, using the mediation of 53 companies. TASS, July 20.

CSO: 1812/187

END

**END OF**

**FICHE**

**DATE FILMED**

Nov. 9, 1982